ADDITIONAL

Service Manual

PIONEER
The future of sound and vision.

ORDER NO.
ARP1842

STEREO AMPLIFIER

A-445 KC, SD

● Refer to the service manual ARP1581, A-443/HE type.

- This manual is applicable to the A-445/KC and SD types.
- The A-445/KC is the same as the A-443/KC except for the minor differences.
- The A-445/SD is the same as the A-443/SD except for the minor differences.

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS SERVICE INC. P.O. Box 1760, Long Beach, California 90801 U.S.A.
PIONEER ELECTRONICS OF CANADA, INC. 505 Cochrane Drive, Markham, Ontario L3R 8E3 Canada
PIONEER ELECTRONIC [EUROPE] N.V. Keetberglaan 1, 2740 Beveren, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911
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1. CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

The A-445/KC and SD types are the same as the A-443/HE type with the exception of the following sections.

Mark	Symbol & Description	Part No.			Remarks
		A-443/HE	A-445/KC	A-445/SD	
⚠	AC power cord	ADG1019	ADG1033	ADG1016	
⚠	Fuse (FU1) (T2, 5A)	AEK-403	AEK-308	.....	
⚠	Fuse (FU1, FU2) (2.5A)	.....	.....	AEK-123	
	Remote slide switch (S2)	ASU1012	ASU1013	ASU1013	
	Remote slide switch (S1)	ASU1014	ASU1015	ASU1015	
	Nut	NK90FUC	NK90FZB	NK90FZB	
	Front panel	ANB1180	ANB1289	ANB1289	
	Name plate	AAM-030	AAM1029	AAM1029	
	Knob L	AAB1064	AAB1105	AAB1105	
	Knob M	AAB1066	AAB1094	AAB1094	
	Push knob	AAD1162	AAD1536	AAD1536	
	Knob (POWER)	AAD1343	AAD1535	AAD1535	
	Operating instructions (English/German/French/Italian/Dutch/Swedish/Spanish/Portuguese)	ARE1073	.....	.....	
	Operating instructions (English/French)	.....	ARE1113	.....	
	Operating instructions (English)	.....	.....	ARB1164	
	Operating instructions (Spanish)	.....	.....	ARC1131	
	Packing case	AHD1392	AHD1610	AHD1610	
⚠	3P AC outlet	.....	AKP-515	AKP-515	
	Rear panel	Non supply	Non supply	Non supply	
	Screw	ABA-297	ABA1082	ABA1082	
⚠	Power transformer (T1)	ATS1137	ATS1159	ATS1158	
⚠	Line voltage selector	.....	.....	AKX-506	
	Strain relief	AEC-882	AEP-113	AEC-882	
	AF complex assembly	AWZ1890	AWZ2009	AWZ2009	
	Speaker switch assembly	Non supply	Non supply	Non supply	*1

*1: The SPEAKER SWITCH assembly for A-445/KC and SD types are identical.

AF COMPLEX ASSEMBLY

The AF COMPLEX assembly (AWZ2009; A-445/KC and SD types) is the same as the AF COMPLEX assembly (AWZ1890; A-443/HE type) with the exception of the following sections.

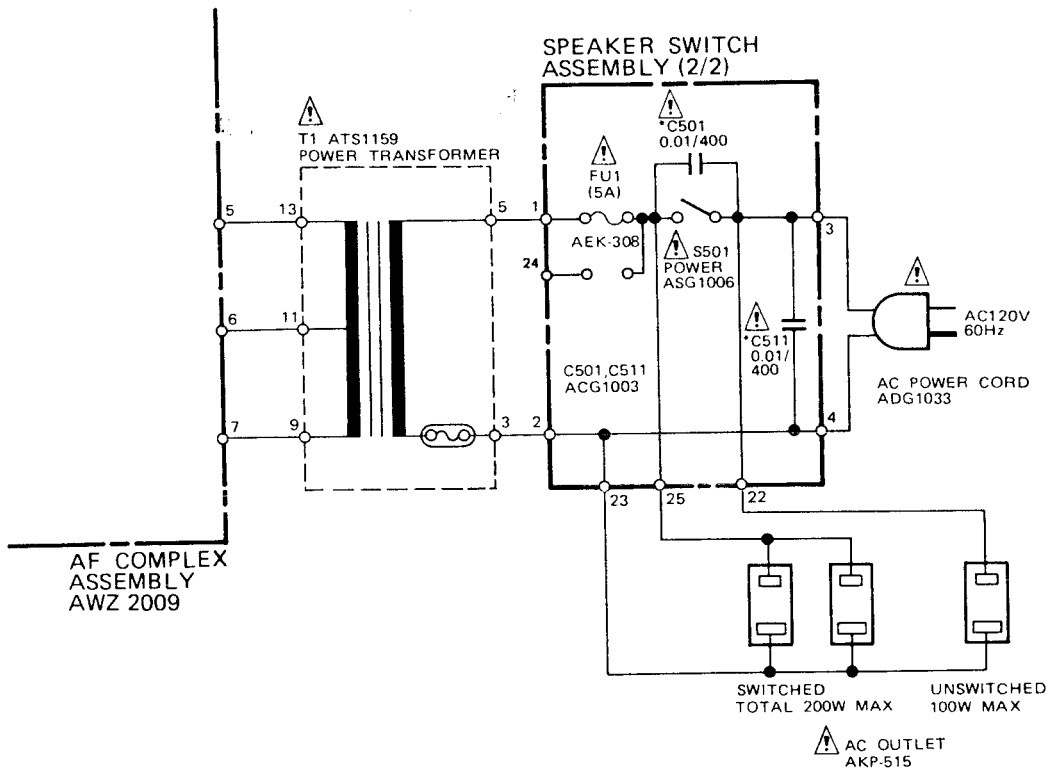
Mark	Symbol & Description	Part No.		Remarks
		AWZ1890	AWZ2009	
	C205, C206	CCCSL101J50	CCMSL101J50	
	C203, C204	CMA101J500	CCCSL101K500	
	C225, C226	CCCSL151J50	CKMYB151K50	
	C219, C220, C719, C720	CKCYB331K50	CKMYB331K50	
	C207, C208	CCCSL470J50	CCMSL470J50	
	C221-C224	CCCSL680J50	CCMSL680J50	

SPEAKER SWITCH ASSEMBLY

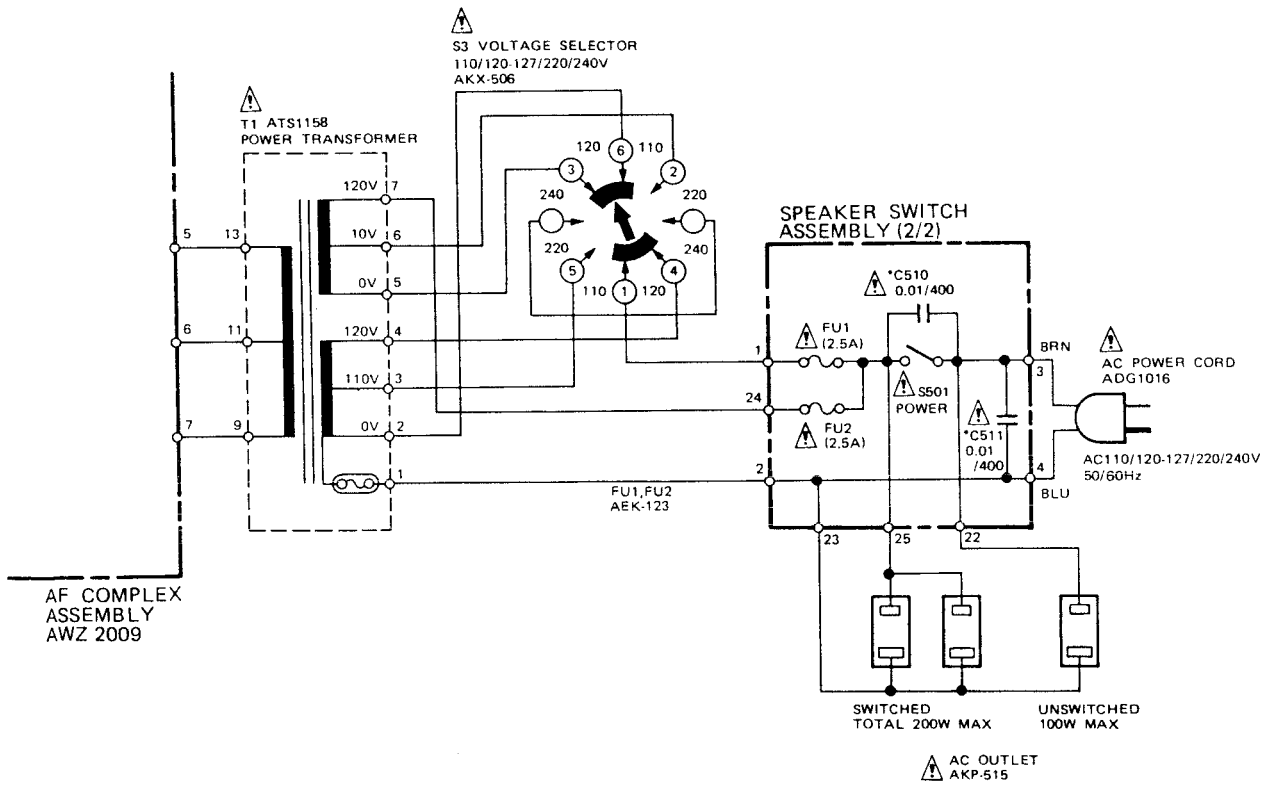
The service supply parts for the SPEAKER SWITCH assembly (Non supply: A-445/KC and SD types) and the SPEAKER SWITCH assembly (Non supply: A-443/HE type) are identical. In regard to difference in the circuit, refer to "2. SCHEMATIC DIAGRAM".

2. SCHEMATIC DIAGRAM

• FOR KC TYPE



• FOR SD TYPE



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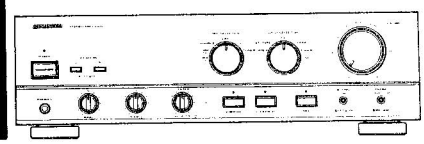
Service Manual



ORDER NO.
ARP1581

STEREO AMPLIFIER

A-443
A-443-S
A-333
A-333-S

A-443, A-443-S, AND A-333, A-333-S HAVE FIVE VERSIONS:

Type	Applicable model				Power requirement	Destination
	A-443	A-443-S	A-333	A-333-S		
HE	○	–	○	–	AC220V, 240V (switchable)*	European continent
HB	○	–	○	–	AC220V, 240V (switchable)*	United Kingdom
HEZ	○	○	○	○	AC220V, 240V (switchable)*	West Germany
KC	○	–	–	–	AC120V only	Canada
SD	○	–	–	–	AC110V, 120V–127V, 220V, 240V (switchable)	Kingdom of Saudi Arabia and general market

*Change the primary wiring of the power transformer.

- This manual is applicable to the A-443/HE, HB, HEZ, A-443-S/HEZ, A-333/HE, HB, HEZ and A-333-S/HEZ types.
- For the other types, refer to additional service manual.
- The A-443-S is silver versions of A-443.
- The A-333-S is silver versions of A-333.

CONTENTS

1. EXPLODED VIEW AND PARTS LIST 2
2. PACKING 5
3. SCHEMATIC DIAGRAM 6
4. P.C.BOARDS CONNECTION DIAGRAM 9
5. ELECTRICAL PARTS LIST 16
6. FOR A-443/HB, HEZ AND A-443-S/HEZ TYPES. 19
7. FOR A-333/HE, HB, HEZ AND A-333-S/HEZ TYPES 22
8. SPECIFICATIONS 37
9. PANEL FACILITIES 39

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS SERVICE INC. P.O. Box 1760, Long Beach, California 90801 U.S.A.
PIONEER ELECTRONICS OF CANADA, INC. 505 Cochrane Drive, Markham, Ontario L3R 8E3 Canada
PIONEER ELECTRONIC [EUROPE] N.V. Keetberglaan 1, 2740 Beveren, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

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1. EXPLODED VIEW AND PARTS LIST

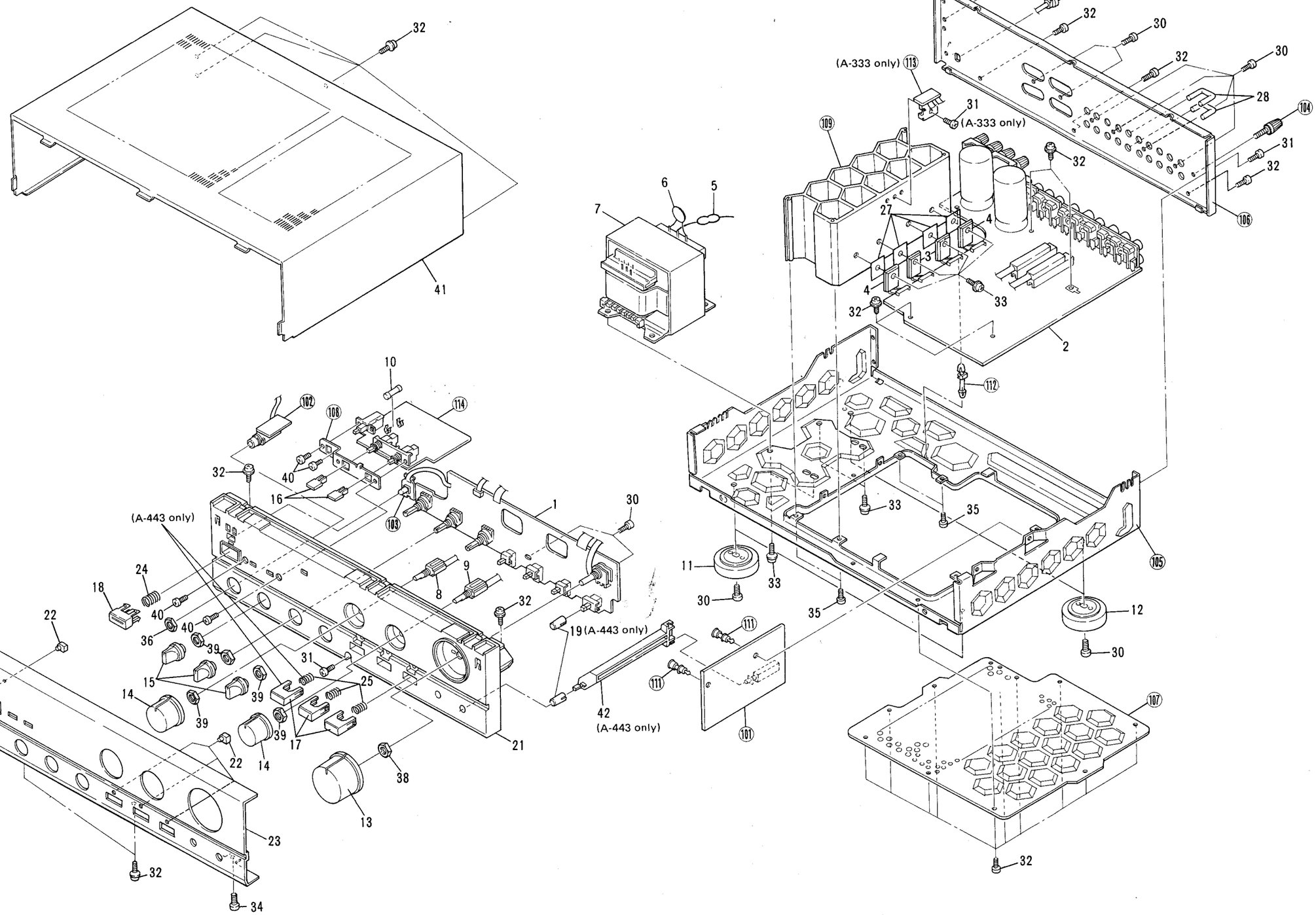
NOTES :

- Parts without part number cannot be supplied.
- The ⚠ mark found on some component parts indicates the impotance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
  ★★ GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

Parts List of Exterior

Mark	No.	Part No.	Description
	1	AWZ1885	TONE assembly
	2	AWZ1890	AF complex assembly
⚠★★	3	2SA1302	Transistor (Q3, Q4)
⚠★★	4	2SC3281	Transistor (Q1, Q2)
	5	RDR¼PM6R8J	Carbon resistor (R1)
	6	CQMXA104J100	Capacitor (C1)
⚠ ★	7	ATS1137	Power transformer (T1 AC220/240V)
★★	8	ASU1012	Remote slide switch (REC SELECTOR : S2)
★★	9	ASU1014	Remote slide switch (INPUT SELECTOR : S1)
⚠★★	10	AEK-403	Fuse (FU1 T2.5A)
	11	AMR1350	Insulator assembly
	12	AMR1353	Insulator assembly
	13	AAB1064	Knob (VOLUME)
	14	AAB1066	Knob (REC SELECTOR, INPUT SELECTOR)
	15	AAB1068	Knob (BASS, TREBLE, BALANCE)
	16	AAD-418	Knob B (SPEAKERS)
	17	AAD1162	Knob (SUBSONIC, LOUDNESS, DIRECT)
	18	AAD1343	Knob (POWER)
	19	AAD1366	Knob C (MUTING, PHONO SELECTOR)
	20	AAM-030	Name plate
	21	AMB1334	Panel base
	22	AMR1160	LED lens
	23	ANB1180	Front panel
	24	ABH-052	Coil spring B
	25	ABH1034	Coil spring B
⚠	26	AEC-882	Strain relief
	27	AEE1014	Mica sheet
	28	AKM1019	Pin jack joint
	29	ABA-297	Screw M4×0.7
	30	ABA-298	Screw
	31	ABA1009	Screw
	32	ABA1011	Screw
	33	ABA1034	Screw
	34	ABA1048	Screw
	35	ABA1050	Screw
	36	ABN-065	Nut
⚠	37	ADG1019	AC power cord
	38	NK70FUC	Nut
	39	NK90FUC	Nut
	40	VMZ30P060FCU	Screw
	41	AZN1746	Bonnet
	42	AMR1161	Joint arm
	101		PHONO AMP assembly
	102		HEAD PHONE assembly
	103		LED assembly
	104		Terminal (GND)
	105		Chassis
	106		Rear panel
	107		Bottom plate
	108		Switch holder
	109		Heat sink
	110		.....
	111		Nylon rivet
	112		Spacer
	113		TRANSISTOR assembly
	114		Speaker switch assembly

Exterior



2. F

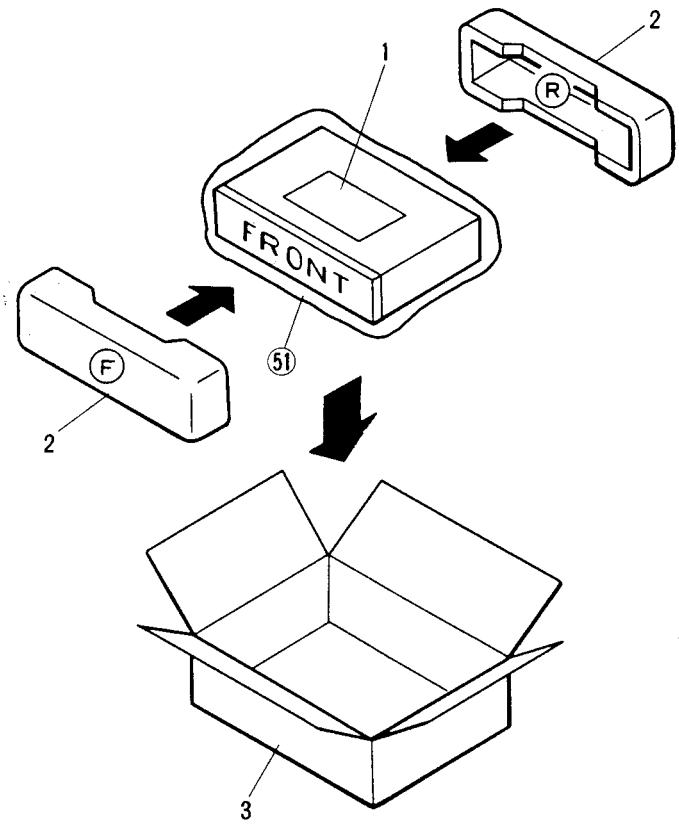
Part Li

Mark

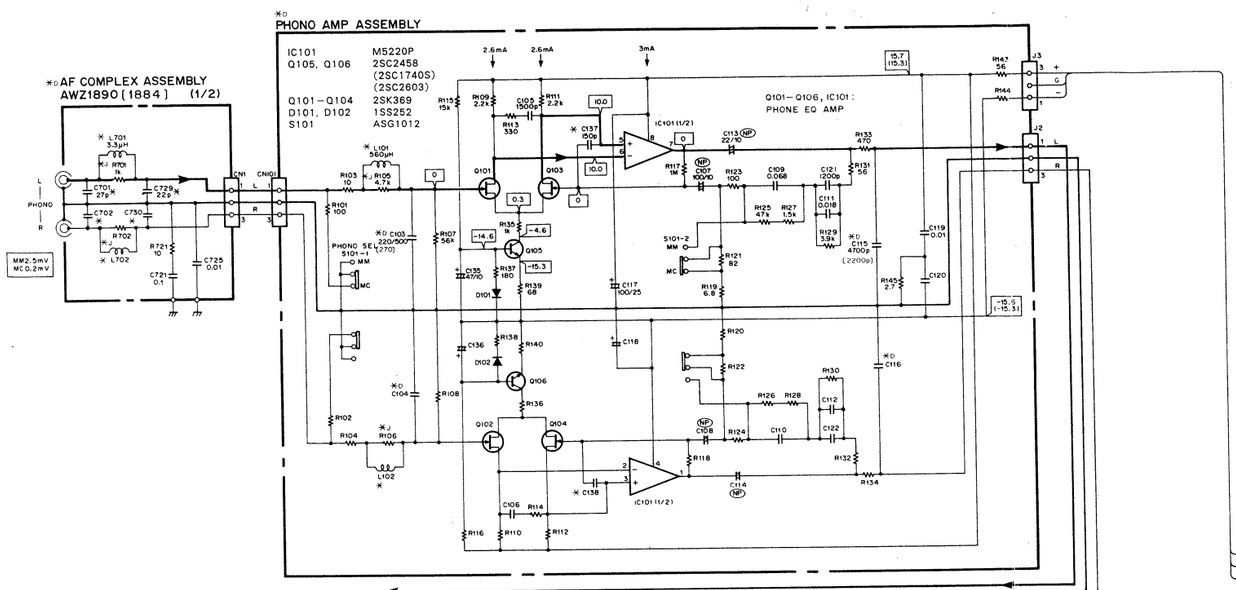
2. PACKING

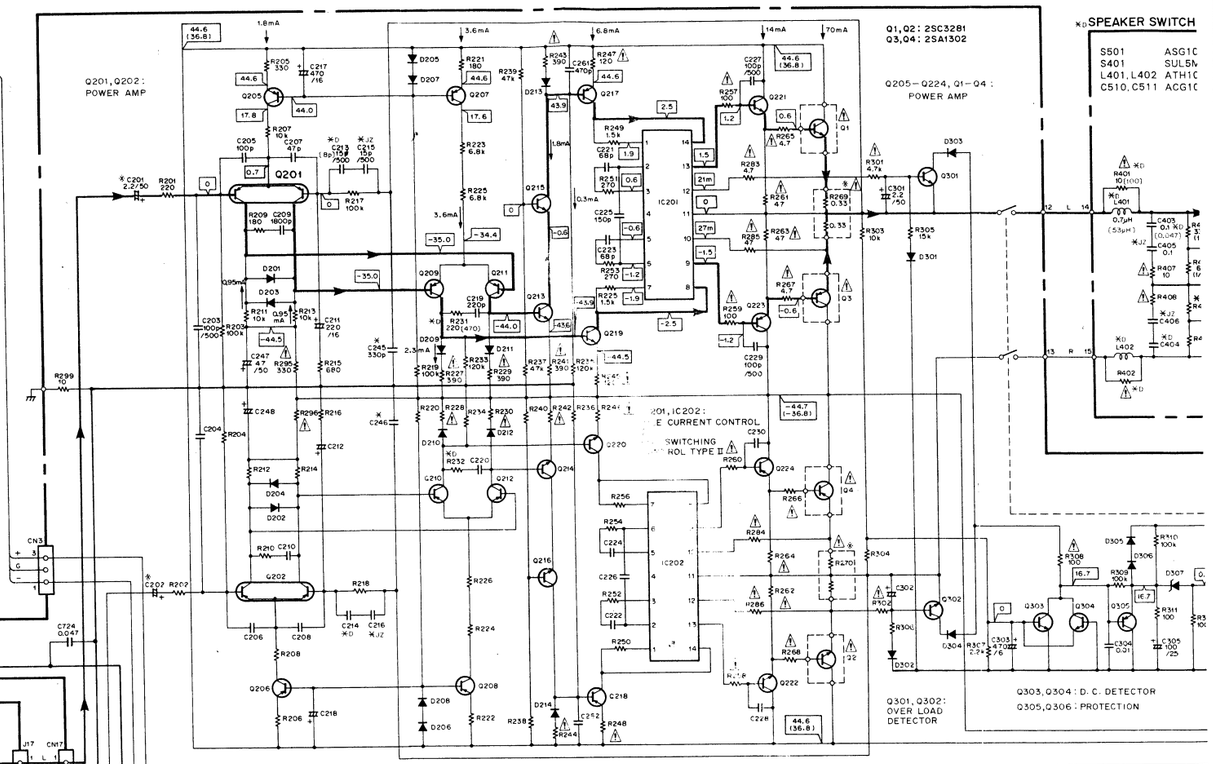
Part List

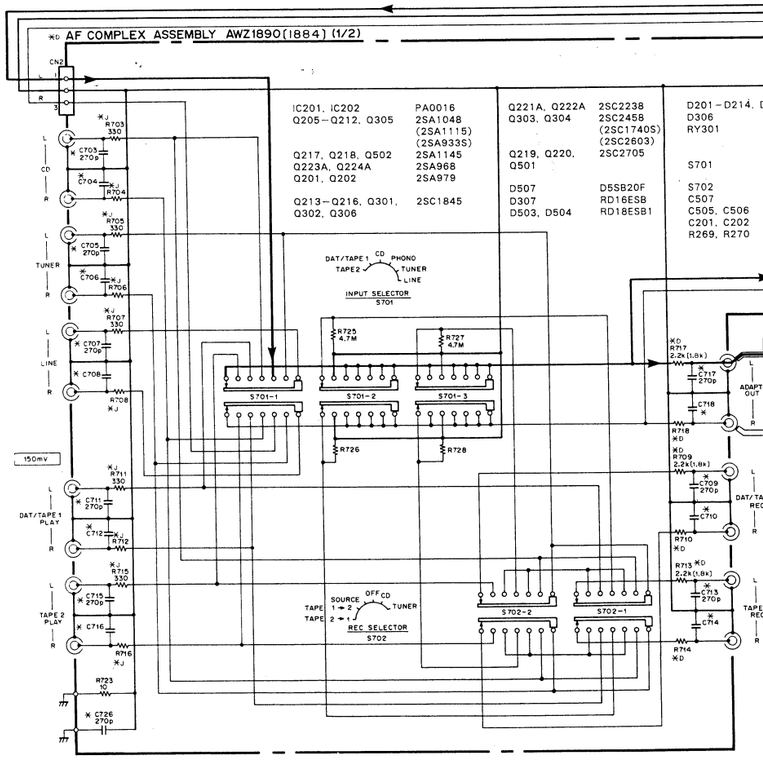
Mark	No.	Part No.	Description
	1	ARE1073	Operating instructions
	2	AHA1015	Front rear pad
	3	AHD1392	Packing case
	51		Packing seat

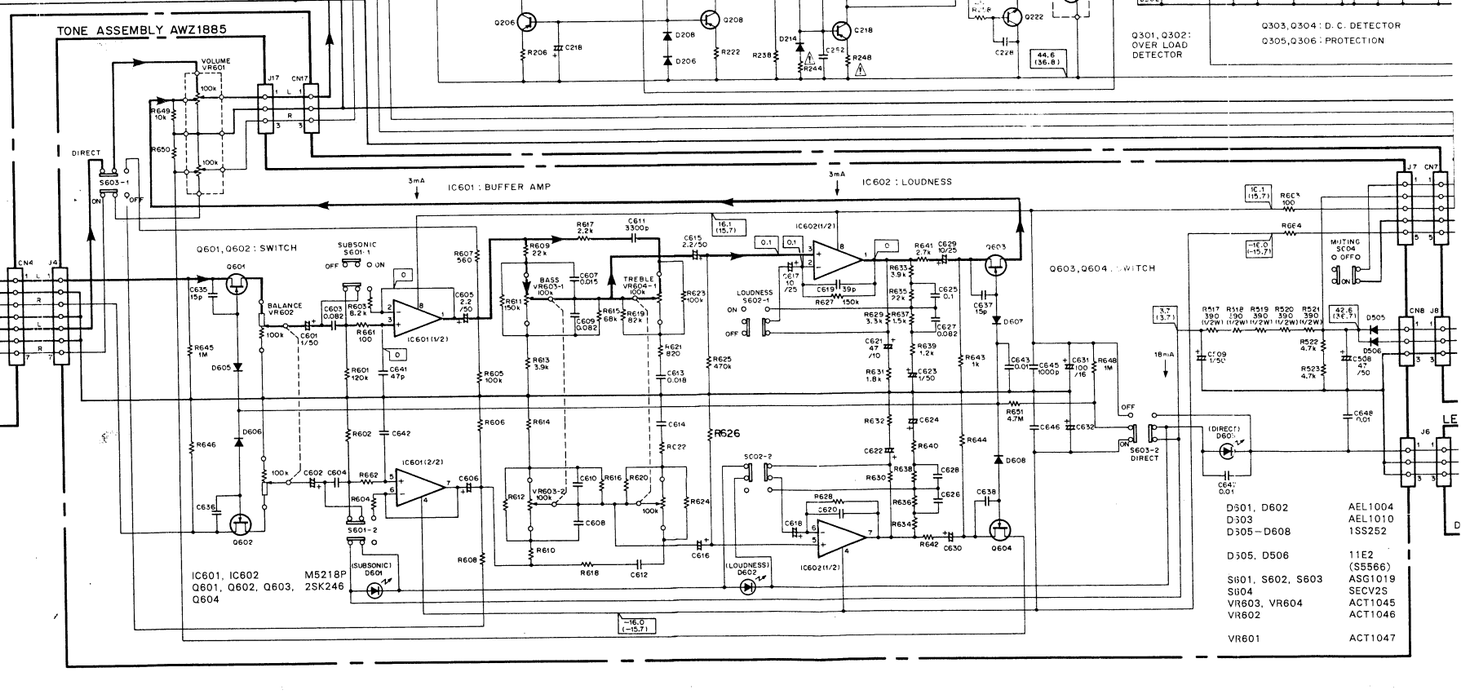


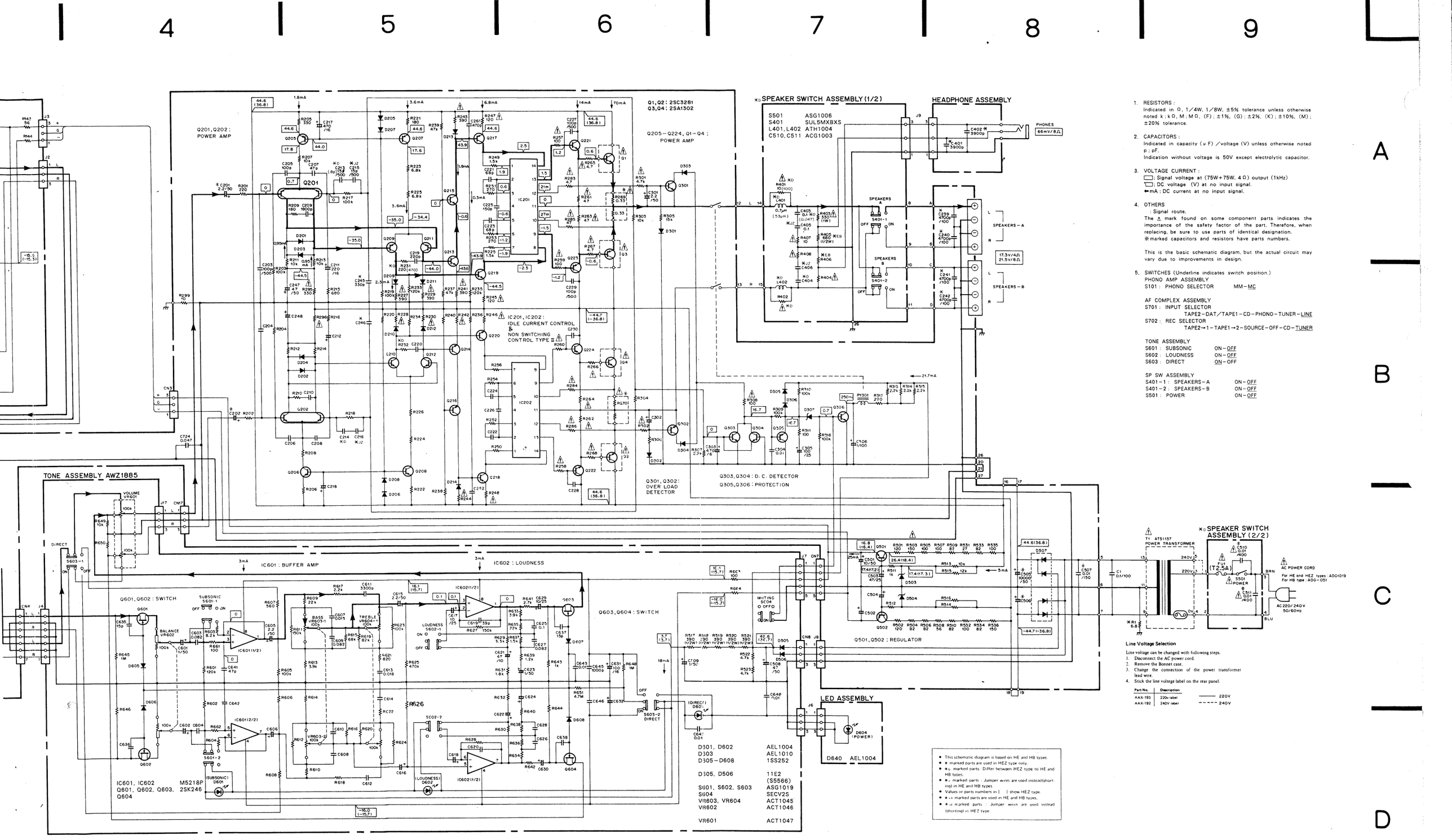
3. SCHEMATIC DIAGRAM











1. RESISTORS :
Indicated in Ω, 1/4W, 1/8W, ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10%, (M) : ±20% tolerance.

2. CAPACITORS :
Indicated in capacity (μF) /voltage (V) unless otherwise noted p : pF.
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE CURRENT :
▭ : Signal voltage at (75W+75W, 4Ω) output (1kHz)
▱ : DC voltage (V) at no input signal.
⬅mA : DC current at no input signal.

4. OTHERS
: Signal route.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

5. SWITCHES (Underline indicates switch position.)
PHONO AMP ASSEMBLY
S101 : PHONO SELECTOR MM – MC

AF COMPLEX ASSEMBLY
S701 : INPUT SELECTOR TAPE2 – DAT/TAPE1 – CD – PHONO – TUNER – LINE
S702 : REC SELECTOR TAPE2 → 1 – TAPE1 → 2 – SOURCE – OFF – CD – TUNER

TONE ASSEMBLY
S601 : SUBSONIC ON – OFF
S602 : LOUDNESS ON – OFF
S603 : DIRECT ON – OFF

SP SW ASSEMBLY
S401 – 1 : SPEAKERS – A ON – OFF
S401 – 2 : SPEAKERS – B ON – OFF
S501 : POWER ON – OFF

- This schematic diagram is based on HE and HB types.
- ※ marked parts are used in HEZ type only.
- ※v marked parts : Differ between HEZ type to HE and HB types.
- ※r marked parts : Jumper wires are used instead(shorting) in HE and HB types.
- Values or parts numbers in [ ] show HEZ type.
- ※m marked parts are used in HE and HB types.
- ※u marked parts : Jumper wires are used instead (shorting) in HEZ type.

Line Voltage Selection

Line voltage can be changed with following steps.
1. Disconnect the AC power cord.
2. Remove the Bonnet case.
3. Change the connection of the power transformer lead wire.
4. Stick the line voltage label on the rear panel.

Part No.	Description	
AAX-193	220v label	—— 220V
AAX-192	240V label	- - - - 240V

4. P.C.BOARDS CONNECTION DIAGRAM

● View from component side

NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 E C B	E C B or E C B	Transistor
Q215 C E B	E C B or E C B	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	C513	Capacitor (Polarity)
C518	C518	Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with ◯ (double circles) shows negative terminal.
4. The diode terminal marked with ◯ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

- ＊D marked parts: Differ between HEZ type to HE and HB types.
- This P.C. BOARDS CONNECTION DIAGRAM is based on HE and HB types.
- ＊ marked parts are used in HEZ type only.
- ＊J marked parts : In HE and HB types, jumper wires are mounted instead.
- ＊EB marked parts are used in HE and HB types.
- ＊JZ marked parts : In HEZ type, jumper wires are mounted instead.

AC220/240V 50/60Hz

AC POWER CORD

＊D SPEAKER SWITCH ASSEMBLY

＊D AF COMPLEX ASSEMBLY AWZ1890

＊D HEADPHONE ASSEMBLY

PHONES

POWER TRANSFORMER

HE,HEZ TYPES

HB TYPE

TONE ASSEMBLY AWZ1885

LED ASSEMBLY

RED

BASS

TREBLE

BALANCE

SUBSONIC

LOUDNESS

DIRECT

MUTING

VOLUME

IC601

IC602

Q601 Q602 Q604 Q603

VR601

VR602

VR603

VR604

TAPE 2 PLAY REC

TAPE 1 PLAY REC

ADAPTOR IN OUT

RY301

PIONEER

*D AF COMPLEX ASSEMBLY AWZ1890

*D SPEAKER SWITCH ASSEMBLY

*D PHONO AMP ASSEMBLY

TAPE 2 PLAY REC | TAPE 1 PLAY REC | ADAPTOR IN OUT | CD | TUNER | LINE | PHONE

PIONEER

T1 POWER TRANSFORMER

HE, HEZ TYPES | HB TYPE

SPA SPB

IC602 | Q601 Q602 Q604 Q603 | VR601

VOLUME | BASS | TREBLE | LOUD NESS | DIRECT | MUTING

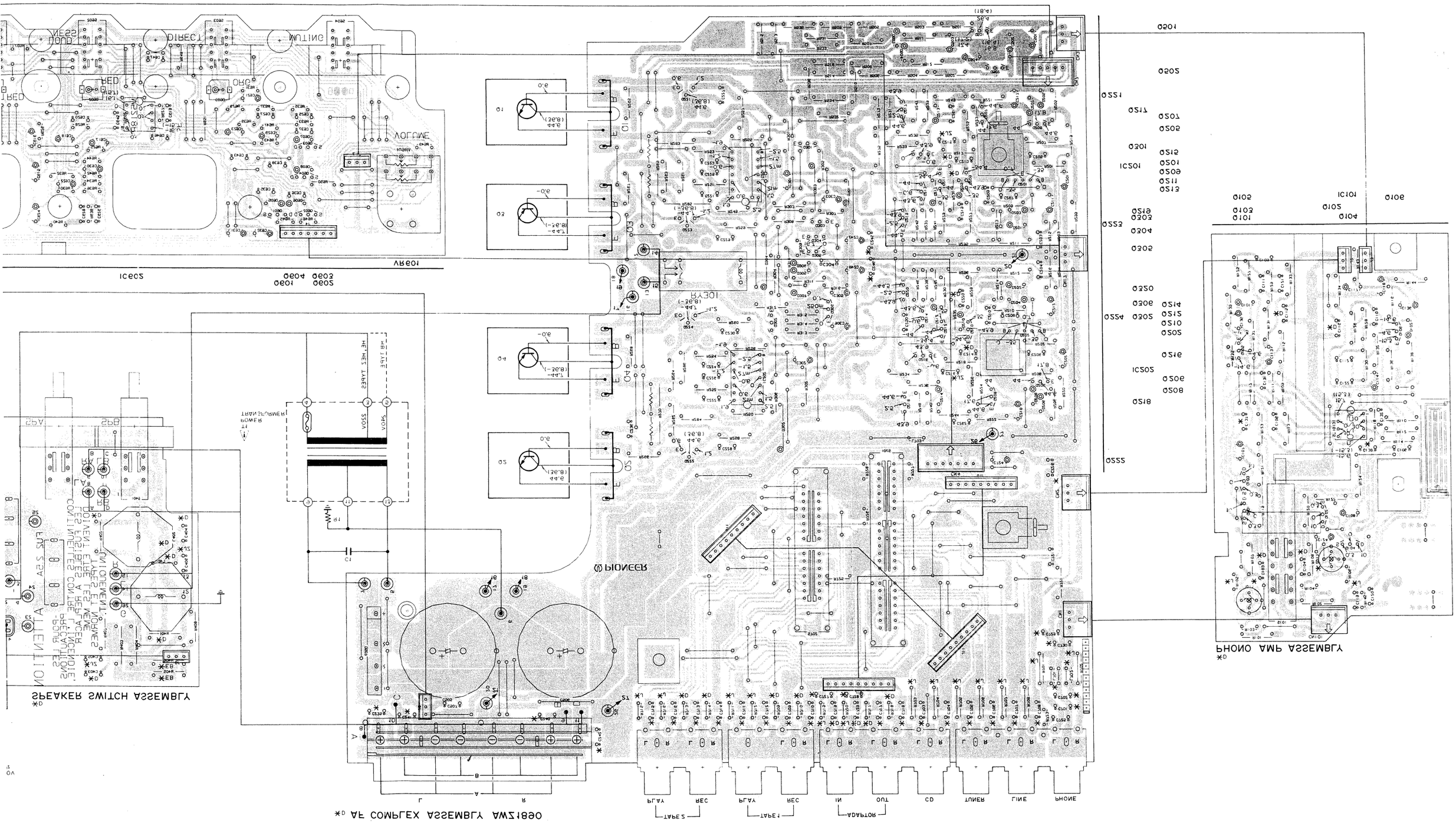
RY301

Q222 | Q218 | Q208 Q206 | IC202 | Q216 | Q202 Q210 Q212 Q214 | Q224 Q302 Q306 | Q320 | Q305 | Q304 | Q223 Q303 Q219 | Q213 Q211 Q209 | IC201 Q201 | Q215 | Q301 | Q205 | Q207 | Q217 | Q221 | Q502 | Q501

Q101 Q103 Q105 | Q104 Q102 IC101 | Q106

4 5 6 7 8 9

A B C D

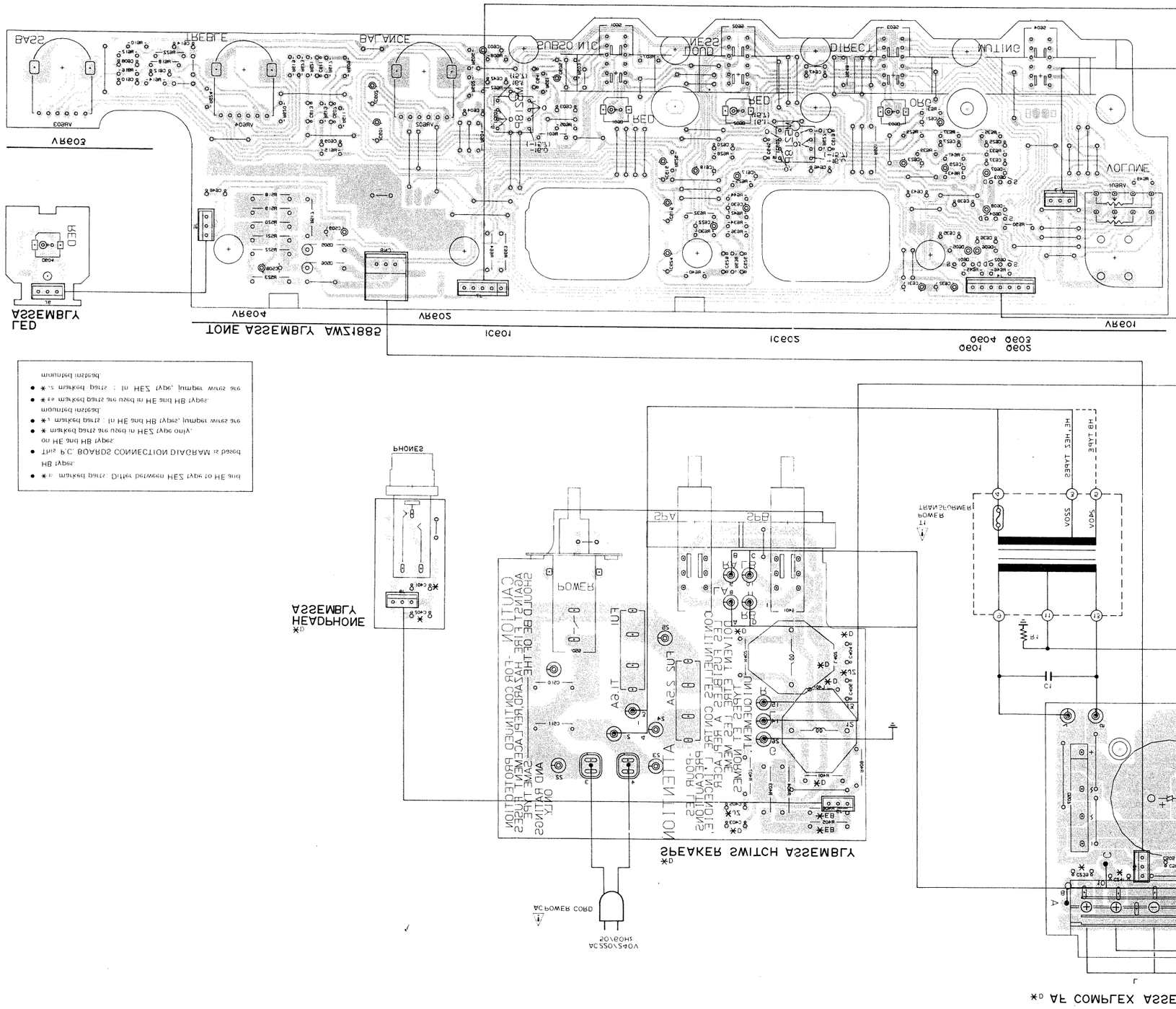


• View from soldering side

A B C D

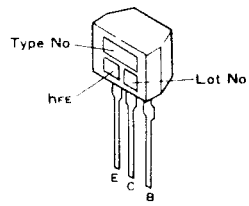
1 2 3 4 5 6 7 8 9

- ✱1: marked parts: Differ between HE5 type to HE and HB type.
- THIS P.C. BOARD CONNECTION DIAGRAM is based on HE and HB type.
- ✱2: marked parts are used in HE5 type only.
- ✱3: marked parts : In HE and HB type, Inputs are terminated.
- ✱4: marked parts are used in HE and HB type unterminated.
- ✱5: marked parts : In HE5 type, Inputs are terminated.



External appearance of transistors and ICs

2SA933S
2SC1740S



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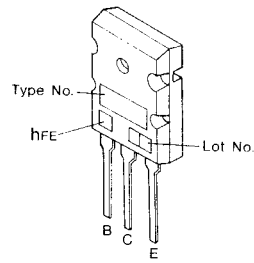
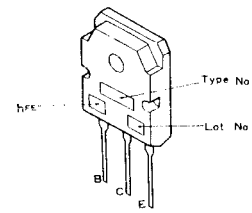
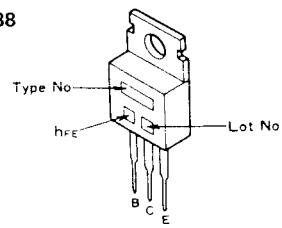
2SA3281



2SA1264N
2SC3181N



2SA968
2SC2238



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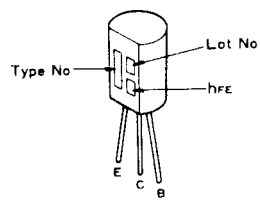

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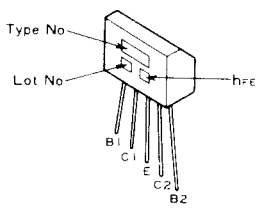

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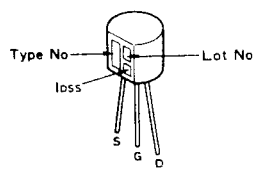

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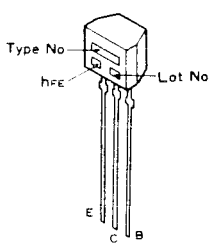

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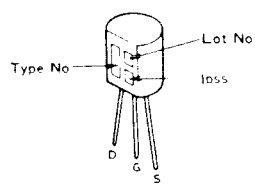
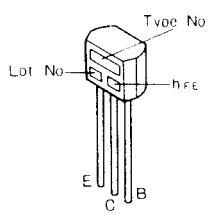
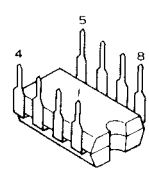


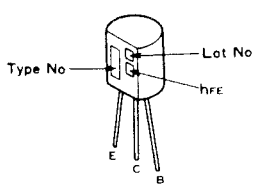
2SA1115
2SC2603



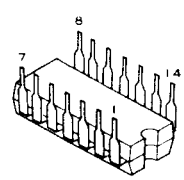
M5218P
M5220P



2SA1145
2SC2705



PA0016



5. ELECTRICAL PARTS LIST

NOTES :

- Parts without part number cannot be supplied.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The ⚠ mark found on some component parts indicates the impotance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
  ★★ GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.
  Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	56×10^{1}	561	·····RD1/4PS 5 6 1 J
47k Ω	47×10^{3}	473	·····RD1/4PS 4 7 3 J
0.5 Ω	0R5		·····RN2H 0 R 5 K
1 Ω	010		·····RS1P 0 1 0 K

  Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	562×10^{1}	5621	····· RN1/4SR 5 6 2 1 F

Miscellaneous Parts

P. C. BOARD ASSEMBLY

Mark	Symbol & Description	Part No.
	Tone assembly	AWZ1885
	AF Complex assembly	AWZ1890
	Phono amp assembly	
	Speaker switch assembly	
	Headphone assembly	
	LED assembly	

OTHERS

Mark	Symbol & Description	Part No.
★★	Q3, Q4	2SA1302
★★	Q1, Q2	2SC3281
	R1	RDR¼PM6R8J
	C1	CQMXA104J100
⚠ ★	T1 Power transformer (220V/240V)	ATS1137
★★	S2 Rotary switch (REC SELECTOR)	ASU1012
★★	S1 Rotary switch (INPUT SELECTOR)	ASU1014
⚠★★	FU1 Fuse (T2.5A)	AEK-403
⚠	AC Strain relief	AEC-882
⚠	AC Power cord	ADG1019

Tone assembly (AWZ1885)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC601, IC602	M5218P
★★	Q601, Q602, Q603, Q604	2SK246
★	D601, D602	AEL1004
★	D603	AEL1010
★	D605-D608	1SS252
★	D505, D506	11E2 (S5566)

SWITCHES

Mark	Symbol & Description	Part No.
★★	S601, S602, S603 Push switch (SUBSONIC, LOUDNESS, DIRECT)	ASG1019
★★	S604 Push switch (MUTING)	SECV2S

CAPACITORS

Mark	Symbol & Description	Part No.
	C635-C638	CCMSL150J50
	C619, C620	CCMSL390J50
	C641, C642	CCMSL470J50
	C509, C601, C602, C623, C624	CEAS010M50
	C617, C618, C629, C630	CEAS100M25
	C631, C632	CEAS101M16
	C605, C606, C615, C616	CEAS2R2M50
	C621, C622	CEAS470M10
	C508	CEAS470M50
	C603, C604	CFTXA823J50
	C611, C612	CGMYB332M25
	C643	CKCYB103K50 (CKDYB103K50)
	C647, C648	CKDYF103Z50
	C625, C626	CKDYX104M25
	C607, C608	CKDYX153M25
	C613, C614	CKDYX183M25
	C609, C610, C627, C628	CKDYX823M25
	C645, C646	CKDYB102K50

RESISTORS

Mark	Symbol & Description	Part No.
★	VR603, VR604 Variable resistor (BASS, TREBLE : 100k×2)	ACT1045
★	VR602 Variable resistor (BALANCE : 100k×2)	ACT1046
★	VR601 Variable resistor (VOLUME : 100k×2)	ACT1047
	R517-R523	RD½PM□□□J
	R663, R664, R651	RD¼PM□□□J
	Other resistors	RD⅛PM□□□J

AF complex assembly (AWZ1890)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC201, IC202	PA0016
★★	Q205－Q212, Q305	2SA1048 (2SA1115) (2SA933S)
★★	Q217, Q218, Q502	2SA1145
★★	Q223, Q224	2SA968
★★	Q201, Q202	2SA979
★★	Q213－Q216, Q301, Q302, Q306	2SC1845
★★	Q221, Q222	2SC2238
★★	Q303, Q304	2SC2458 (2SC1740S) (2SC2603)
★★	Q219, Q220, Q501	2SC2705
★	D507	D5SB20F
★	D307	RD16ESB
★	D503, D504	RD18ESB1
★	D201－D214, D301－D306	1SS252

SWITCHES AND RELAY

Mark	Symbol & Description	Part No.
★★	RY301 Relay (PROTECTION)	ASR－112 (ASR－107) (ASR－109)
★★	S701 Remote slid switch (INPUT SELECTOR)	ASU1016
★★	S702 Remote slid switch (REC SELECTOR)	ASU1002

CAPACITORS

Mark	Symbol & Description	Part No.
	C507 (0.01／AC150)	ACG1005
	C505, C506 (10000／50)	ACH1078
	C201, C202 (2.2／50)	ACH1096
	C203, C204, C227－C230	CCCSL101K500 (CCDSL101K500)
	C213－C216	CCCSL150K500 (CCDSL150K500)
	C205, C206	CCMSL101J50
	C207, C208	CCMSL470J50
	C221－C224	CCMSL680J50
	C306	CEAS010M100
	C501, C502	CEAS100M50
	C305	CEAS101M25
	C301, C302	CEAS2R2M50
	C503, C504	CEAS470M25
	C247, C248	CEAS470M50
	C217, C218, C303	CEAS471M6
	C211, C212	CEYA221M16
	C209, C210	CKCYB182K50 (CKDYB182K50)
	C304, C725	CKCYF103Z50 (CKDYF103Z50)
	C721	CKCYX104M25 (CKDYX104M25)
	C724	CKDYF473Z50
	C225, C226	CKMYB151K50
	C219, C220	CKMYB221K50
	C719, C720	CKMYB331K50
	C261, C262	CKMYB471K50

RESISTORS

Mark	Symbol & Description	Part No.
⚠	R269, R270 Wire wound (0.33 Ω ×2／5W)	ACN－139
	R201－R204, R215－R218	RDR¼PM□□□J
⚠	R503	RD¼PMFL151J
⚠	R227－R230, R257－R268, R301, R302, R283－R286, R295, R296, R308	RD¼PMF□□□J
	R723, R309, R310, R316, R307, R709, R710, R713, R714, R717, R718, R725－R728	RD⅛PM□□□J
⚠	R241－R248	RFA¼PS□□□J
	Other resistors	RD¼PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Terminal 4P (TAPE2, ADAPTOR)	AKB1007
	Terminal 6P (PHONO, CD, TUNER)	AKB1008
	Terminal 6P (LINE, TAPE1)	AKB1024
	Terminal 8P (SPEAKER)	AKE1011

Phono Amp Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC101	M5220P
★★	Q105, Q106	2SC2458 (2SC1740S) (2SC2603)
★★	Q101－Q104	2SK369
★	D101, D102	1SS252

SWITCHS

Mark	Symbol & Description	Part No.
★★	S101 Push switch (MM－MC)	ASG1012

CAPACITORS

Mark	Symbol & Description	Part No.
	C103, C104	CCCSL221K500 (CCDSL221K500)
	C107, C108	CEANP101M10
	C113, C114	CEANP220M10
	C117, C118	CEAS101M25
	C135, C136	CEAS470M10
	C111, C112	CFTXA183J50
	C109, C110	CFTXA683J50
	C119, C120	CKCYF103Z50 (CKDYF103Z50)
	C105, C106	CKMYB152K50
	C121, C122	CQMA122J50
	C115, C116	CQMA472K50

RESISTORS

Mark	Symbol & Description	Part No.
	R101, R102, R107, R108, R119–R122, R133, R134	RDR¼PM□□□J
	R104, R103	RDR⅙PU100J
	R145	RD⅛PM2R7J
	Other resistors	RD¼PM□□□J

Speaker Switch Assembly

SWITCHES

Mark	Symbol & Description	Part No.
⚠	S501 Push switch (POWER)	ASG1006
	S401 Push switch (SP. A–B)	SUL5MXBXS

COILS

Mark	Symbol & Description	Part No.
	L401, L402 AF choke coil (0.7 μ H)	ATH1004

CAPACITORS

Mark	Symbol & Description	Part No.
⚠	C510, C511 (0.01 μ F/400V)	ACG1003
⚠	C403–C406	CFTXA104J50

RESISTORS

Mark	Symbol & Description	Part No.
	R405, R406	RD½PM681J
⚠	R401, R402, R407, R408	RD¼PMFL100J
⚠	R403, R404	RS1LMF331J

Headphone Assembly

OTHERS

Mark	Symbol & Description	Part No.
	Jack (PHONES)	AKN1002

LED Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★	D640 LED assembly	AEL1004

6. FOR A−443/HB, HEZ AND A−443−S/HEZ TYPES

NOTES :

- Parts without part number cannot be supplied.
- The ⚠ mark found on some component parts indicates the impotance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
  ★★ GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

The A−443/HB, HEZ and A−443−S/HEZ types are the same as the A−443/HE type with the exception of the following sections.

Mark	Symbol & Description	Part No.				Remarks
		A−443 HE type	A−443 HB type	A−443 HEZ type	A−443−S HEZ type	
	AF complex assembly	AWZ1890	AWZ1890	AWZ1884	AWZ1884	
	Phono amp assembly	Non supply	Non supply	Non supply	Non supply	
	Speaker switch assembly	Non supply	Non supply	Non supply	Non supply	
⚠	AC power cord	ADG1019	ADG−051	ADG1019	ADG1019	
⚠★★	FU1 Fuse (T2.5A/250V)	AEK−403	AEK−512	AEK−403	AEK−403	
	Headphone assembly	Non supply	Non supply	Non supply	Non supply	
	Knob (VOLUME)	AAB1064	AAB1064	AAB1064	AAB1065	
	Knob (REC SELECTOR, INPUT SELECTOR)	AAB1066	AAB1066	AAB1066	AAB1067	
	Knob (BASS, TREBLE, BALANCE)	AAB1068	AAB1068	AAB1068	AAB1069	
	Knob B (SPEAKERS A, B)	AAD−418	AAD−418	AAD−418	AAD1368	
	Knob (SUBSONIC, LOUDNESS, DIRECT)	AAD1162	AAD1162	AAD1162	AAD1163	
	Knob C (MUTING, PHONO SELECTOR)	AAD1366	AAD1366	AAD1366	AAD1367	
	Knob (POWER)	AAD1343	AAD1343	AAD1343	AAD1344	
	Packing case	AHD1392	AHD1392	AHD1392	AHD1412	
	Panel base	AMB1334	AMB1334	AMB1334	AMB1335	
	Front panel	ANB1180	ANB1180	ANB1180	ANB1181	
R1	Carbon resistor (6.8 Ω)	.....	.....	RD¼PM6R8J	RD¼PM6R8J	
	Operating instructions (English, German, French, Italian, Dutch, Swedish, Spanish, Portuguese)	ARE1073	.....	.....	.....	
	(German)	.....	.....	ARC1077	ARC1077	
	(English)	.....	ARB1102	.....	.....	
	Screw	.....	.....	BBT30P060FZK	ABA−274	For bonnet
	Bonnet	AZN1746	AZN1746	AZN1799	AZN1800	

AF COMPLEX ASSEMBLY (AWZ1884)

The AF complex assembly (AWZ1884) for HEZ type is the same as the AF complex assembly (AWZ1890) for HE and HB types with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		AWZ1890 (HE and HB types)	AWZ1884 (HEZ type)	
	C215, C216	CCCSL150K500	.....	
	C213, C214	CCCSL150K500	CCDSL080D500 (CCCSL080D500)	
	C239–C242	.....	CQMXA472J100	
	C245, C246	.....	CKMYB331K50	
	C701, C702	.....	CCMSL270J50	
	C703–C718	.....	CKMYB271K50	
	C719, C720	CKMYB331K50	CKMYB271K50	
	C724	CKDYF473Z50	CKCYF473Z50 (CKDYF473Z50)	
	C727, C728	.....	CKMYB221K50	
	C729, C730	.....	CCMSL220J50	
	C726	.....	CKMYB271K50	
	R231, R232	RD¼PM221J	RD¼PM471J	
	R701, R702	.....	RD¼PM102J	
	R703, R704	.....	RDR¼PPM331J	
	R705–R708	.....	RD¼PM331J	
	R709, R710, R713, R714, R717, R718	RD⅛PM222J	RD⅛PM182J	
	R711, R712, R715, R716, R719, R720	.....	RD⅛PM331J	
	L701, L702	.....	LAU3R3K	

PHONO AMP ASSEMBLY

The phono amp assembly (for HEZ type) is the same as the phono amp assembly (for HE and HB types) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		For HE and HB types	For HEZ type	
	C103, C104	CCCSL221K500	CCDSL271K500 (CCCSL271K500)	
	C115, C116	CQMA472K50	CQMA222K50	
	C137, C138	.....	CKMYB151K50	
	L101, L102 Coil (560 μ H)	.....	ATH1024	
	R105, R106	.....	RD⅛PM472J	

SPEAKER SWITCH ASSEMBLY

The Speaker switch assembly (for HEZ type) is the same as the Speaker switch assembly (for HE and HB types) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		For HE and HB types	For HEZ type	
	C403, C404	CFTXA104J50	CFTXA473J50	
	C405, C406	CFTXA104J50	.....	
	L401, L402 AF choke coil	ATH1004	ATH1009	
	R401, R402	RD¼PMFL100J	RD¼PMFL101J	
	R405, R406	RD½PM681J	.....	

HEADPHONE ASSEMBLY

The Headphone assembly (for HEZ type) is the same as the Headphone assembly (for HE and HB types) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		For HE and HB types	For HEZ type	
	C401, C402	.....	CKCYB392K50	

7. FOR A−333/HE, HB, HEZ AND A−333−S/HEZ TYPES

The A−333/HE, HB, HEZ and A−333−S/HEZ types are the same as the A−443/HE type with the exception of the following sections.

Mark	Symbol & Description	Part No. A−443 HE type	A−333 HE type	A−333 HB type	A−333 HEZ type	A−333−S HEZ type
	AF complex assembly	AWZ1890	AWZ1898	AWZ1898	AWZ1894	AWZ1894
	Phono amp assembly	Non supply	Non supply	Non supply	Non supply	Non supply
	Speaker switch assembly	Non supply	Non supply	Non supply	Non supply	Non supply
	Tone assembly	AWZ1885	AWZ1895	AWZ1895	AWZ1895	AWZ1895
⚠ ★	T1 Power transformer (220/240V)	ATS1137	ATS1138	ATS1138	ATS1138	ATS1138
	Transistor assembly	.....	Non supply	Non supply	Non supply	Non supply
	Headphone assembly	Non supply	Non supply	Non supply	Non supply	Non supply
⚠★★	FU1 Fuse (T2.5A/250V)	AEK−403	.....	.....	.....	.....
⚠★★	FU1 Fuse (T1.6A/250V)	.....	AEK−405	AEK−510	AEK−405	AEK−405
	C1	CQMXA104J100	CQMXA473J100	CQMXA473J100	CQMXA473J100	CQMXA473J100
	R1	.....	.....	.....	RD¼PM6R8J	RD¼PM6R8J
★★	Q3, Q4	2SA1302	2SA1264N	2SA1264N	2SA1264N	2SA1264N
★★	Q1, Q2	2SC3281	2SC3181N	2SC3181N	2SC3181N	2SA3181N
	Knob B (SPEAKERS)	AAD−418	AAD−418	AAD−418	AAD−418	AAD1368
	Knob (SUBSONIC)	AAD1162	.....	.....	.....	.....
	Knob (LOUDNESS, DIRECT)	AAD1162	AAD1162	AAD1162	AAD1162	AAD1163
	Knob C (MUTING, PHONO SELECTOR)	AAD1366	.....	.....	.....	.....
	Knob (POWER)	AAD1343	AAD1343	AAD1343	AAD1343	AAD1344
	Joint arm	AMR1161	.....	.....	.....	.....
	Front panel	ANB1180	ANB1182	ANB1182	ANB1182	ANB1183
	Panel base	AMB1334	AMB1334	AMB1334	AMB1334	AMB1335
	Bonnet	AZN1746	AZN1746	AZN1746	AZN1799	AZN1800
	Screw (For bonnet)	.....	.....	.....	BBZ30P060FZK	ABA−274
	Screw (For heat sink)	ABA1050	.....	.....	.....	.....
	Packing case	AHD1392	AHD1393	AHD1393	AHD1393	AHD1413
	Knob (VOLUME)	AAB1064	AAB1064	AAB1064	AAB1064	AAB1065
	Knob (REC SELECTOR, INPUT SELECTOR)	AAB1066	AAB1066	AAB1066	AAB1066	AAB1067
	Knob (BASS, TREBLE, BALANCE)	AAB1068	AAB1068	AAB1068	AAB1068	AAB1069
	Operating instructions (English, German, French, Italian, Dutch, Swedish, Spanish, Portuguese)	ARE1073	ARE1073	ARE1073	.....	.....
	(English)	.....	.....	ARB1102	.....	.....
	(German)	.....	.....	.....	ARC1077	ARC1077
★★	S2 Rotary switch (REC SELECTOR)	ASU1012	ASU1013	ASU1013	ASU1013	ASU1013
★★	S1 Rotary switch (INPUT SELECTOR)	ASU1014	ASU1015	ASU1015	ASU1015	ASU1015
⚠	AC power cord	ADG1019	ADG1019	ADG−051	ADG1019	ADG1019

7.1 ELECTRICAL PARTS LIST OF A-333/HE, HB AND HEZ types

• For A-333/HE and HB types

NOTES :

- Parts without part number cannot be supplied.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The ⚠ mark found on some component parts indicates the impotance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
  ★★ GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.
  Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	56×10^{1}	561	RD1/4PS 5 6 1 J
47k Ω	47×10^{3}	473	RD1/4PS 4 7 3 J
0.5 Ω	0R5		RN2H 0 R 5 K
1 Ω	010		RS1P 0 1 0 K

  Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	562×10^{1}	5621	RN1/4SR 5 6 2 1 F

Miscellaneous Parts

P. C. BOARD ASSEMBLIES

Mark	Symbol & Description	Part No.
	Tone assembly	AWZ1895
	AF complex assembly	AWZ1898
	Phono amp assembly	
	Transistor assembly	
	Speaker switch assembly	
	Headphone assembly	
	LED assembly	

OTHERS

Mark	Symbol & Description	Part No.
⚠★★	Q3, Q4	2SA1264N
⚠★★	Q1, Q2	2SC3181N
	C1	CQMXA473J100
⚠ ★	T1 Power transfomer (AC220/240V)	ATS1138
★★	S2 Rotary switch (REC SELECTOR)	ASU1013
★★	S1 Rotary switch (INPUT SELECTOR)	ASU1015
⚠★★	FU1 Fuse (T1.6A/250V)	AEK-405
⚠	Stain relief	AEC-882
⚠	AC Power cord	ADG1019

Tone Assembly (AWZ1895)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC601, IC602	M5218P
★★	Q601-Q604	2SK246
★	D602	AEL1004
★	D603	AEL1010
★	D605-D608	1SS252
★	D505, D506	11E2 (S5566)

SWITCHES

Mark	Symbol & Description	Part No.
★★	S602, S603 Push switch (LOUDNESS, DIRECT)	ASG1019

CAPACTIORS

Mark	Symbol & Description	Part No.
	C635-C638	CCMSL150J50
	C619, C620	CCMSL390J50
	C641, C642	CCMSL470J50
	C509, C601, C602, C623, C624	CEAS010M50
	C617, C618, C629, C630	CEAS100M25
	C631, C632	CEAS101M16
	C605, C606, C615, C616	CEAS2R2M50
	C621, C622	CEAS470M10
	C508	CEAS470M50
	C611, C612	CGMYB332M25
	C643	CKCYB103K50 (CKDYB103K50)
	C625, C626	CKDYX104M25
	C607, C608	CKDYX153M25
	C613, C614	CKDYX183M25
	C609, C610, C627, C628	CKDYX823M25
	C645, C646	CKMYB102K50
	C633, C634	CKMYB561K50

RESISTORS

Mark	Symbol & Description	Part No.
★	VR603, VR604 Variable resistor (BASS, TREBLE : 100k×2)	ACT1045
★	VR602 Variable resistor (BALANCE : 100k×2)	ACT1046
★	VR601 Variable resistor (VOLUME : 100k×2)	ACT1047
	R517–R521	RD½PM331J
	R522, R523, R651, R663, R664	RD¼PM□□□J
	Other resistors	RD⅛PM□□□J

AF Complex Assembly (AWZ1898)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	Q205, Q206, Q305	2SA1048 (2SA1115)
★★	Q217, Q218	2SA1145
★★	Q223, Q224	2SA968
★★	Q201, Q202	2SA979
★★	Q301, Q302, Q306	2SC1845
★★	Q221, Q222	2SC2238
★★	Q203, Q204, Q303, Q304	2SC2458
★★	Q219, Q220	2SC2705
★	D507	D5SB20F
★	D307	RD16ESB
★	D501, D502	RD16ESB3
★	D205–D208, D221, D222, D301–D306	1SS252

SWITCH AND RELAY

Mark	Symbol & Description	Part No.
★	RY301 Relay (PROTECTION)	ASR–112 (ASR–107) (ASR–109)
★★	S702 Slide switch (INPUT SELECTOR)	ASU1002
★★	S701 Slide switch (REC SELECTOR)	ASU1016

CAPACITORS

Mark	Symbol & Description	Part No.
	C507 (0.01 μF/150V)	ACG1005
	C505, C506 (6800 μF/42V)	ACH1077
	C249, C250	CCCSL100D500 (CCDSL100D500)
	C227–C230	CCCSL101K500 (CCDSL101K500)
	C209, C210	CCCSL221J50 (CCDSL221J50)
	C203–C206	CCMSL101J50
	C213–C216	CCMSL150J50
	C207, C208	CCMSL470J50
	C306	CEAS010M100
	C724	CEAS010M50
	C233, C234	CEAS100M50
	C263, C264	CEAS101M10
	C305	CEAS101M25
	C301, C302	CEAS2R2M50
	C501, C502	CEAS470M25
	C217, C218, C303	CEAS471M6
	C201, C202	CEYA2R2M50
	C211, C212	CEYA221M16
	C251, C252	CKCYB272K50 (CKDYB272K50)
	C304	CKCYF103Z50 (CKDYF103Z50)
	C721	CKCYX104M25 (CKDYX104M25)
	C231, C232	CKMYB122K50
	C719, C720	CKMYB331K50

RESISTORS

Mark	Symbol & Description	Part No.
⚠	R269, R270 (0.33Ω ×2)	ACN–139
	R201–R204, R215–R218	RDR¼PM□□□J
⚠	R205, R206, R247, R248, R261–R264, R301, R302, R308	RD¼PMF□□□J
	R291, R292, R307, R309, R310, R316, R709, R710, R713, R714, R717, R718, R723, R725–R728	RD⅛PM□□□J
⚠	R245, R246, R257–R260	RFA¼PS101J
⚠	R265–R268	RFA¼PS4R7J
	R275, R276	RN¼PQ1501F
	Other resistors	RD¼PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Terminal 4P (TAPE2, ADAPTOR)	AKB1007
	Terminal 6P (PHONO, CD, TUNER)	AKB1008
	Terminal 6P (LINE, TAPE1)	AKB1024
	Terminal 8P (SPEAKER)	AKE1011

Phono Amp Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC101	M5220P

CAPACITORS

Mark	Symbol & Description	Part No.
	C107, C108	CEAS101M10
	C117, C118	CEAS101M25
	C113, C114	CEAS4R7M50
	C111, C112	CFTXA183J50
	C109, C110	CFTXA683J50
	C123, C124	CEAS100M50
	C119, C120	CKCYF103Z50 (CKDYF103Z50)
	C103, C104	CKMYB221K50
	C121, C122	CQMA122J50
	C115, C116	CQMA472K50

RESISTORS

Mark	Symbol & Description	Part No.
	R133, R134, R121, R122	RDR¼PM□□□J
	R103, R104, R141, R142	RDR⅙PU□□□J
	R145	RD⅛PM2R7J
	Other resistors	RD¼PM□□□J

Transistor Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	Q225, Q226	2SC2603

Speaker switch Assembly

SWITCHES

Mark	Symbol & Description	Part No.
⚠★★	S501 Push switch (POWER)	ASG1006
★★	S401 Push switch (SPEAKERS)	SUL5MXBXS

COILS

Mark	Symbol & Description	Part No.
	L401, L402 AF choke coil (0.7 μ H)	ATH1004

CAPACITORS

Mark	Symbol & Description	Part No.
⚠	C501, C511 (0.01 μ F/400V)	ACG1003
	C403–C406	CFTXA104J50

RESISTORS

Mark	Symbol & Description	Part No.
	R405, R406	RD½PM681J
⚠	R401, R402, R407, R408	RD¼PMFL100J
⚠	R403, R404	RS1LMF331J

Headphone Assembly

OTHERS

Mark	Symbol & Description	Part No.
	Jack (PHONES)	AKN1002

LED Assembly

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
★	D604 LED assembly	AEL1004

● For A−333/HEZ and A−333−S/HEZ types.

AF COMPLEX ASSEMBLY (AWZ1894)

The AF complex assembly (AWZ1894) for HEZ type is the same as the AF complex assembly (AWZ1898) for HE and HB types with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		AWZ1898 (HE and HB types)	AWZ1894 (HEZ type)	
	C215, C216	CCDSL150K500	.....	
	C213, C214	CCDSL150K500	CCDSL080D500	
	C239−C242	.....	CQMXA472J100	
	C245, C246	.....	CKMYB331K50	
	C249, C250	CCCSL100D500	CCCSL050C500	
	C251, C252	CKCYB272K50	.....	
	C701, C702	.....	CCMSL680J50	
	C703−C718	.....	CKMYB271K50	
	C719, C720	CKMYB331K50	CKMYB271K50	
	C726	.....	CCMSL121J50	
	C727, C728	.....	CKMYB221K50	
	R209, R210	RD¼PM471J	RD¼PM221J	
	R291, R292	RD⅛PM330J	.....	
	R703−R708	.....	RD¼PM331J	
	R709, R710, R713, R714, R717, R718	RD⅛PM222J	RD⅛PM182J	
	R711, R712, R715, R716, R719, R720	.....	RD⅛PM331J	

PHONO AMP ASSEMBLY

The phono amp assembly (for HEZ type) is the same as the phono amp assembly (for HE and HB types) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		For HE and HB types	For HEZ type	
	C115, C116	CQMA472K50	CQMA222K50	
	L103−L106 inductor	.....	LAU221K	
	R105, R106	.....	RD⅛PM332J	

SPEAKER SWITCH ASSEMBLY

The Speaker switch assembly (for HEZ type) is the same as the Speaker switch assembly (for HE and HB types) with the exception of the following sections.

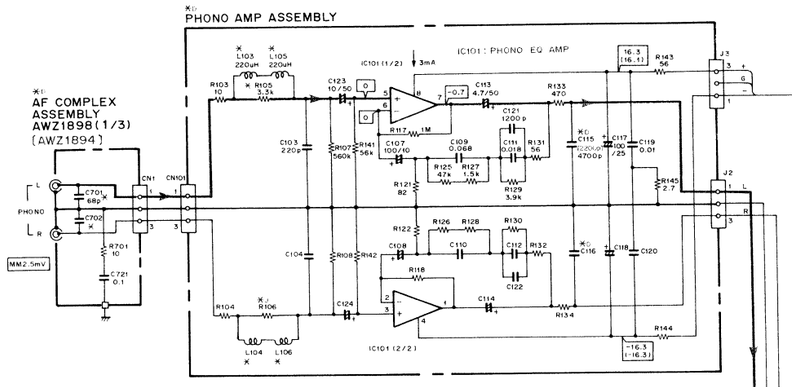
Mark	Symbol & Description	Part No.		Remarks
		For HE and HB types	For HEZ type	
	C403, C404	CFTXA104J50	CFTXA473J50	
	C405, C406	CFTXA104J50	.....	
	L401, L402 AF choke coil	ATH1004	ATH1009	
	R401, R402	RD¼PMFL100J	RD¼PMFL101J	
	R405, R406	RD½PM681J	.....	

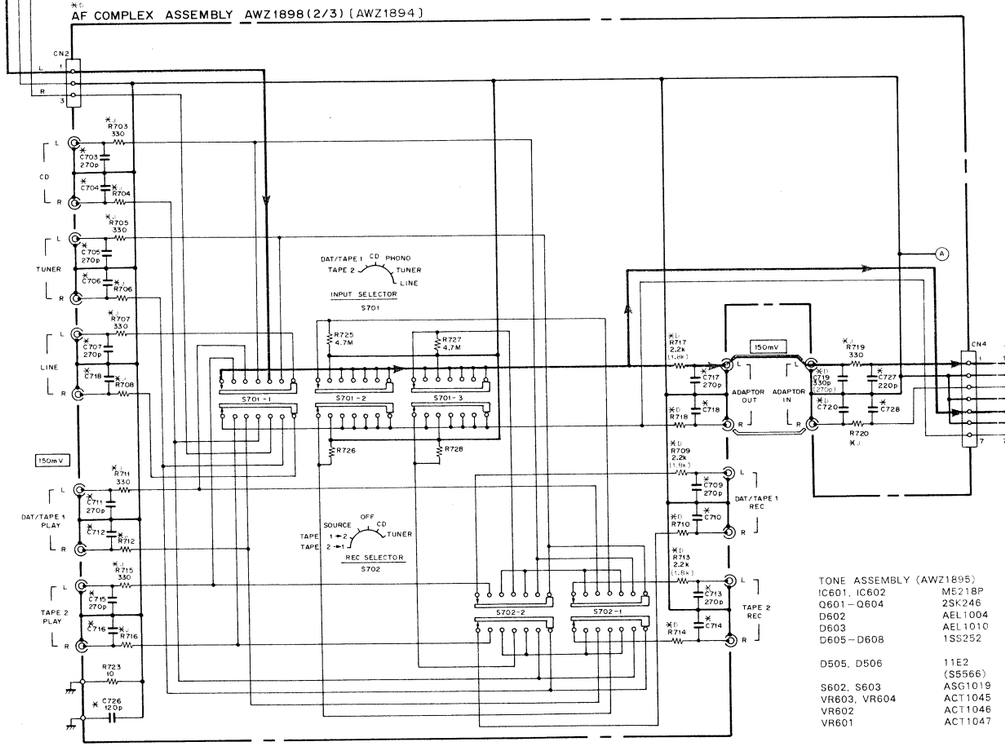
HEADPHONE ASSEMBLY

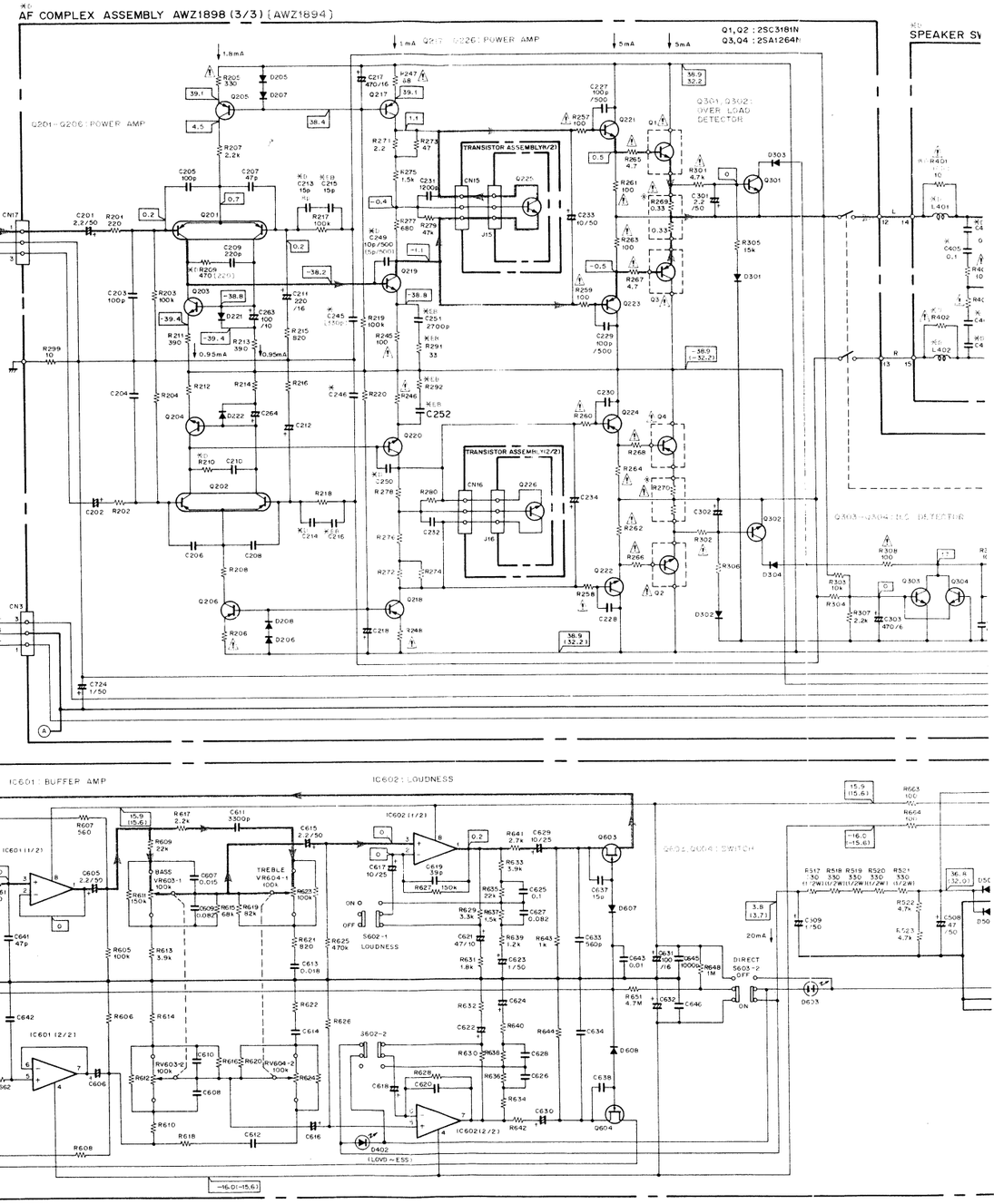
The Headphone assembly (for HEZ type) is the same as the Headphone assembly (for HE and HB types) with the exception of the following sections.

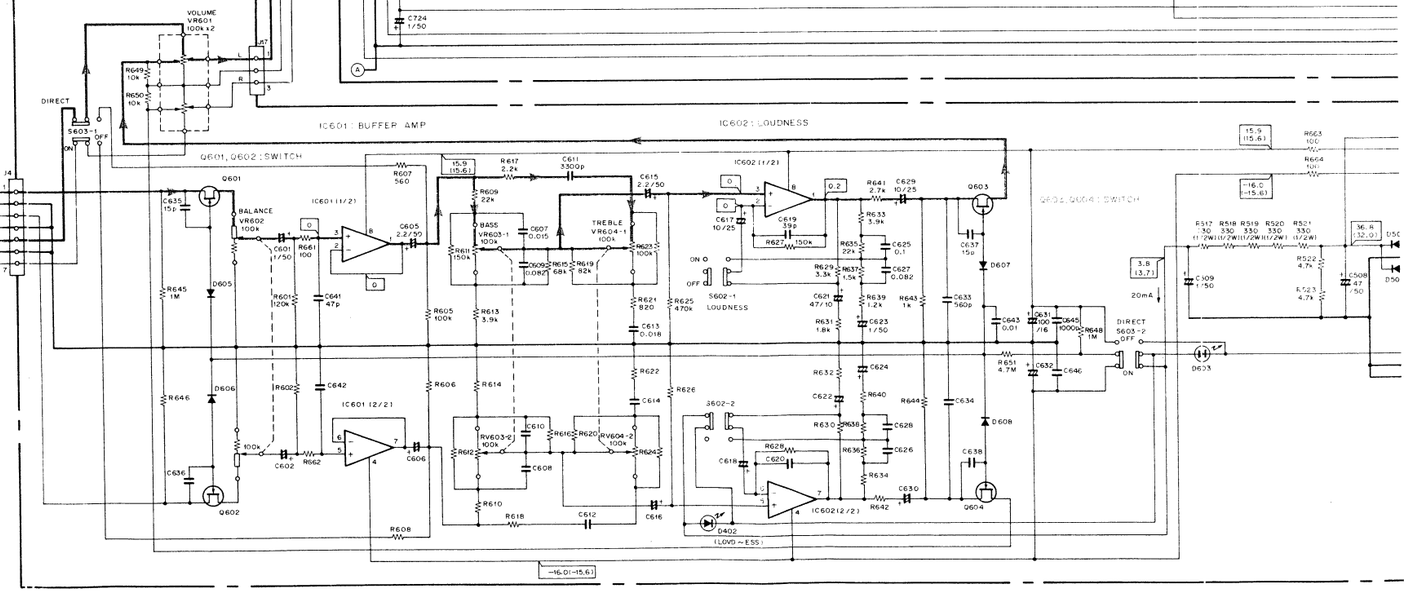
Mark	Symbol & Description	Part No.		Remarks
		For HE and HB types	For HEZ type	
	C401, C402	.....	CKCYB392K50	

7.2 SCHEMATIC DIAGRAM









AF COMPLEX ASSEMELY (AWZ1898)

Q205, Q206, Q305	2SA1048 (2SA1115)
Q217, Q218	2SA1145
Q223A, Q224A	2SA968
Q201, Q202	2SA979
Q301, Q302, Q306	2SC1845
Q221A, Q222A	2SC2238
Q203, Q204, Q303, Q304	2SC2458
Q219, Q220	2SC2705
D507	D5SB20F
D307	RD16ES8
D501, D502	RD16ESB3
D205~D208, D221, D222, D301~D306	1SS252
RY301	ASR-112 (ASR-107) (ASR-109)
S702	ASU1002
S701	ASU1016
C507	ACG1005
C505, C506	ACH1077
R269, R270	ACN-139
PHONO AMP ASSEMBLY IC101	M5220P
TRANSISTOR ASSEMBLY Q225, Q226	2SC2603

TONE ASSEMBLY (AWZ1895)

IC601, IC602	M5218P
Q601~Q604	2SK246
D602	AEL1004
D603	AEL1010
D605~D608	1SS252
D505, D506	11E2 (S5566)
S602, S603	ASG1019
VR603, VR604	ACT1045
VR602	ACT1046
VR601	ACT1047

AF COMPLEX ASSEMBLY AWZ1898 (3/3) (AWZ1894)

Q1, Q2 : 2SC3181N
Q3, Q4 : 2SA1264N

Q201~Q206: POWER AMP

Q301, Q302: OVER LOAD DETECTOR

Q303~Q306: P.C. DETECTOR

Q305, Q306: PROTECTION

TRANSISTOR ASSEMBLY(2/2)

TRANSISTOR ASSEMBLY(1/2)

SPEAKER SWITCH ASSEMBLY (1/2)

HEADPHONE ASSEMBLY

PHONES 66mV/8Ω

SP SW ASSEMBLY

S501	ASG1006
S401	SUL5MXBXS
L401, L402	ATH1004
C501, C511	ACG1003

SPEAKER A

SPEAKER B

17V/4Ω 21V/8Ω

SPEAKER SWITCH ASSEMBLY(2/2)

T1 : ATS1158

POWER TRANSFORMER

AC POWER CORD

AC 220~240V 50/60Hz

TONE ASSEMBLY AWZ1895

VOLUME VR601 100k x2

DIRECT S603-1 OFF ON

IC601 : BUFFER AMP

IC602 : LOUDNESS

Q601, Q602 : SWITCH

BALANCE VR602 100k

BASS VR603-1 100k

TREBLE VR604-1 100k

S602-1 LOUDNESS ON OFF

S602-2 DIRECT OFF ON

LED ASSEMBLY

D604 (POWER)

LED ASSEMBLY
D604 AEL1004

1. RESISTORS
Indicated in Ω, 1/4W, 1/8W, ±5% tolerance unless otherwise noted k: kΩ, M: MΩ. (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% tolerance.

2. CAPACITORS
Indicated in capacity (pF) : voltage (V) unless otherwise noted
p: pF.
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE/CURRENT
Signal voltage at 50W+50W, 4Ω output (1kHz)
DC voltage (V) at no input signal
mA: DC current at no input signal

4. OTHERS
→ Signal route
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

5. SWITCHES (Underline indicates switch position.)

AF COMPLEX ASSEMBLY
S701 : INPUT SELECTOR
TAPE2 - DAT - TAPE1 - CD - PHONO - TUNER - LINE
S702 : REC SELECTOR
TAPE2 - +1 - TAPE1 - +2 - SOURCE - OFF - CD - TUNER

TONE ASSEMBLY
S602 : LOUDNESS ON - OFF
S603 : DIRECT ON - OFF

SPEAKER SWITCH ASSEMBLY
S401 - 1 : SPEAKERS - A ON - OFF
S401 - 2 : SPEAKERS - B ON - OFF
S501 : POWER ON - OFF

Line Voltage Selection

Line voltage can be changed with following steps.
1. Disconnect the AC power cord.
2. Remove the B-mount case.
3. Change the connection of the power transformer lead wire.
4. Stick the line voltage label on the rear panel.

Part No.	Description	
AAX-190	220v label	220V
AAX-192	240V label	240V

7.3 P. C. BOARDS CONNECTION DIAGRAM

- **View from component side**

NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

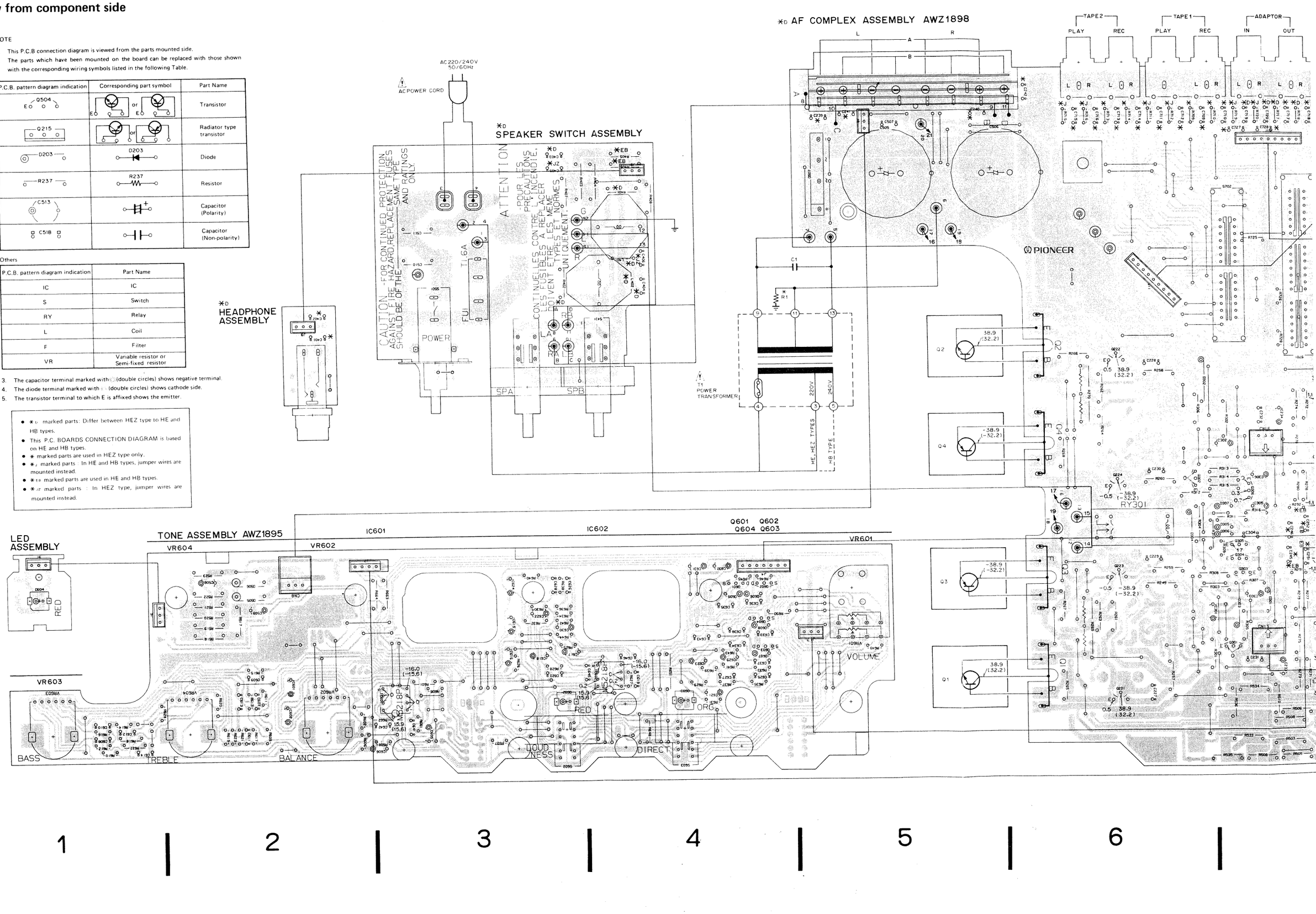
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 (E B C)	E B C or E B C	Transistor
Q215 (B C E)	B C E or B C E	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Capacitor (Polarity)
C518		Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with ◎ (double circles) shows negative terminal.
4. The diode terminal marked with ◎ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

- ✱D marked parts: Differ between HEZ type to HE and HB types.
- This P.C. BOARDS CONNECTION DIAGRAM is based on HE and HB types.
- ✱ marked parts are used in HEZ type only.
- ✱J marked parts : In HE and HB types, jumper wires are mounted instead.
- ✱EB marked parts are used in HE and HB types.
- ✱JZ marked parts : In HEZ type, jumper wires are mounted instead.



4 5 6 7 8 9

A

B

C

D

*D AF COMPLEX ASSEMBLY AWZ1898

*D SPEAKER SWITCH ASSEMBLY

*D PHONO AMP ASSEMBLY

TRANSISTOR ASSEMBLY

IC602

Q601 Q602
Q604 Q603

VR601

IC101

Q222
Q218
Q206
Q202
Q224 Q302
Q306
Q320
Q204
Q305
Q304
Q223
Q303
Q219
Q203
Q301
Q205
Q217
Q221

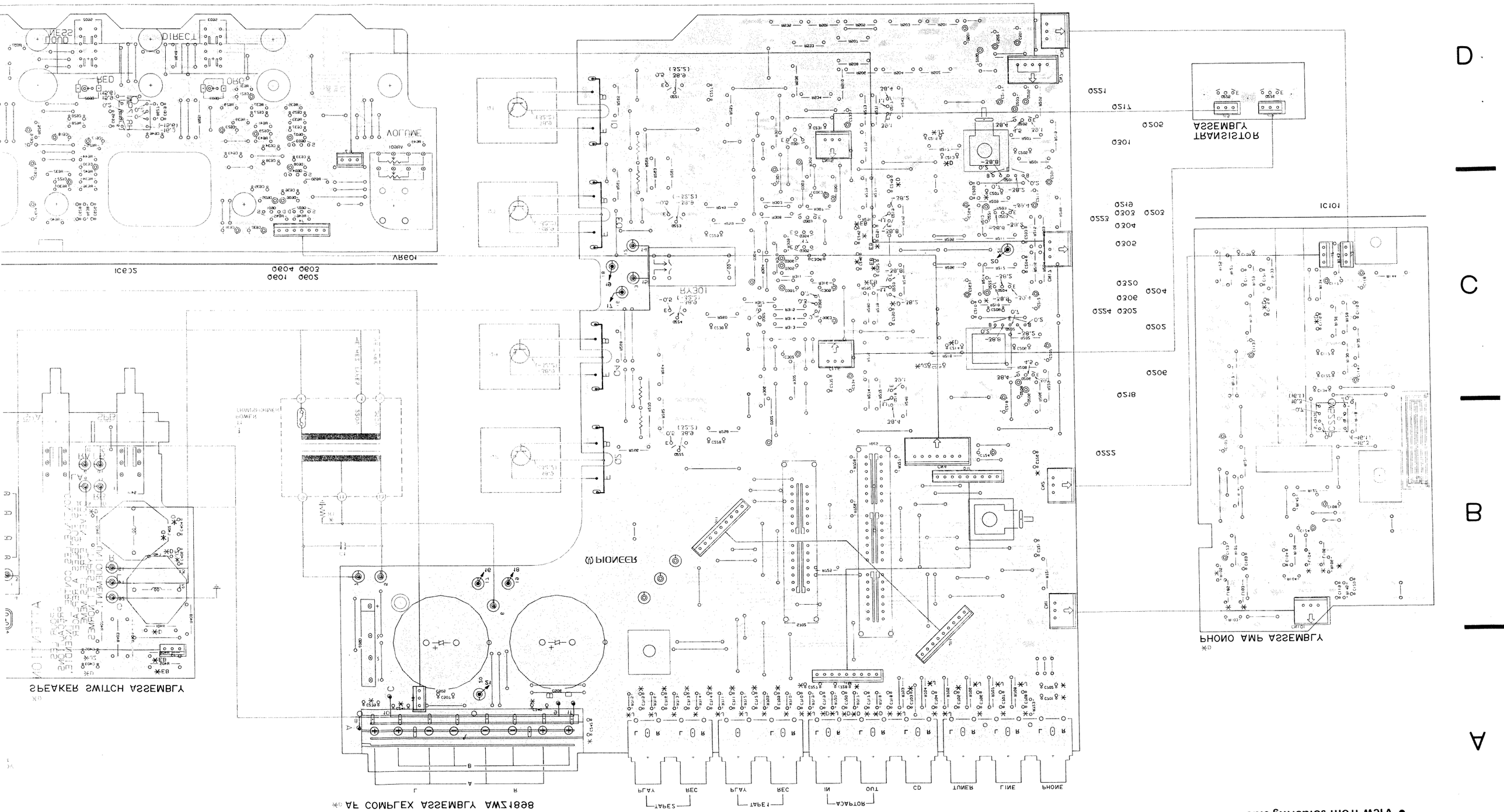
TAPE2 PLAY REC
TAPE1 PLAY REC
ADAPTOR IN OUT
CD TUNER LINE PHONE

T1 POWER TRANSFORMER
220V 240V
HE, HEZ TYPES
HB TYPE

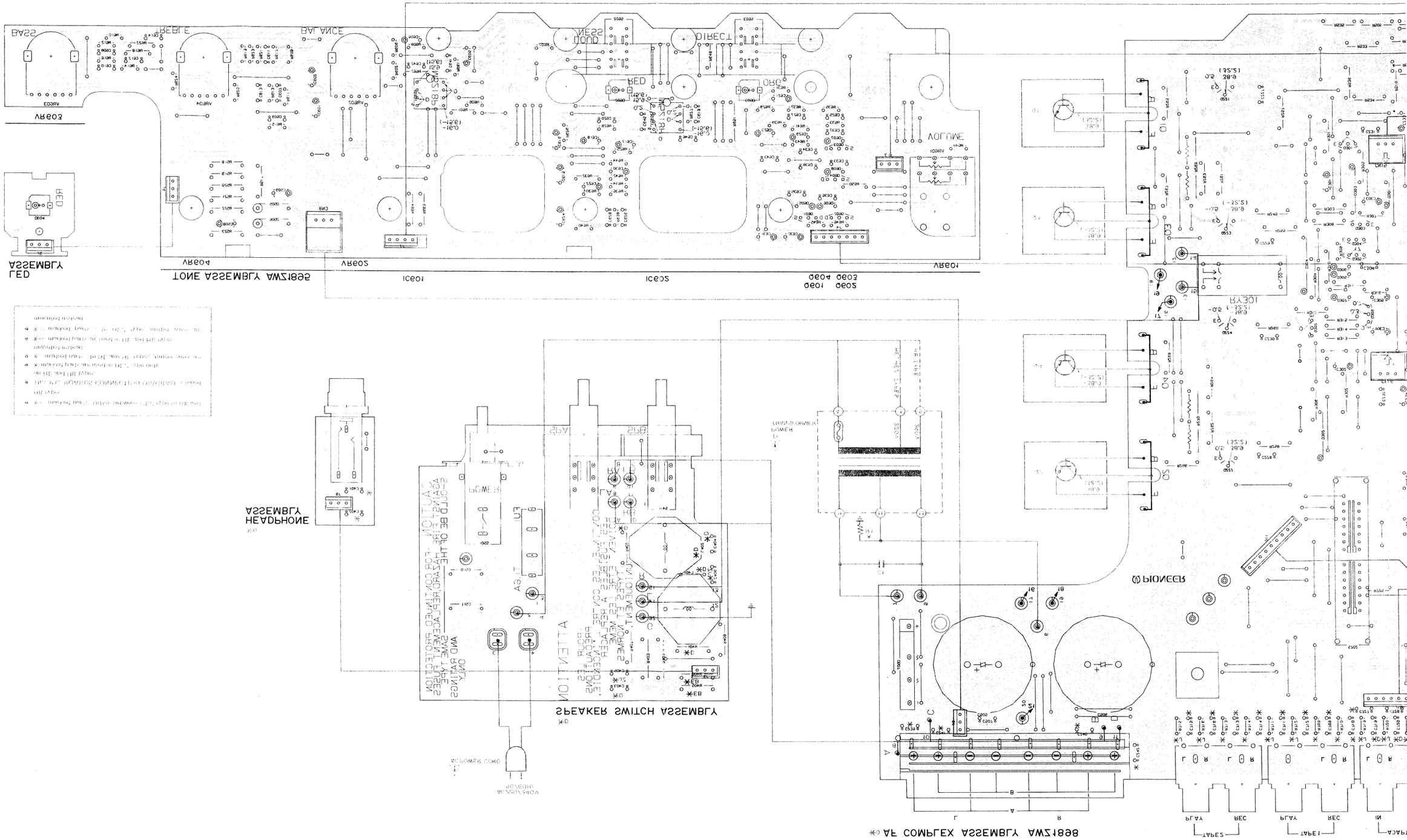
VOLUME
LOUDNESS
DIRECT
RED
ORG

RY301

PIONEER



● View from soldering side


TONE ASSEMBLY AWZ1888
LED ASSEMBLY
SPEAKER SWITCH ASSEMBLY
HEADPHONE ASSEMBLY
AT COMPLEX ASSEMBLY AWZ1888
PIONEER

8. SPECIFICATIONS

• A-443

Amplifier Section

Continuous power output (both channels driven at 20 Hz to 20 kHz) * *
- T.H.D. 0.008%, 8Ω . . . . . 60W + 60W *
- T.H.D. 0.02%, 4Ω . . . . . 80W + 80W *

DIN Continuous power output (both channels driven at 1 kHz)
- T.H.D. 1.0%, 8Ω . . . . . 70W + 70W
- T.H.D. 1.0%, 4Ω . . . . . 100W + 100W

Dynamic power output (on EIA dynamic test signal)
- 8Ω . . . . . 75W + 75W
- 4Ω . . . . . 110W + 110W
- 2Ω . . . . . 150W + 150W

Total harmonic distortion * *
- 20 Hz to 20 kHz, 60W, 8Ω . . . . . 0.008% *
- 20 Hz to 20 kHz, 80W, 4Ω . . . . . 0.02% *

Input sensitivity/impedance
- PHONO (MM) . . . . . 2.5 mV/50 kΩ
- PHONO (MC) 0.2 mV/100Ω
- CD, TUNER, LINE, TAPE . . . . . 150 mV/40 kΩ

PHONO overload level
- 1 kHz, T.H.D. 0.008% (MM/MC) . . . 150 mV/12 mV

Output level/impedance
- TAPE REC, ADAPTOR OUTPUT . . . . 150 mV/2.2 kΩ

Frequency response
- PHONO (MM), 20 Hz to 20 kHz . . . . . ±0.3 dB
- PHONO (MC), 20 Hz to 20 kHz . . . . . ±0.5 dB
- CD, TUNER, LINE, TAPE 5Hz to 100 kHz . . $^{+0}_{-3}$ dB *

Tone control (volume control set at −40 dB position)
- BASS . . . . . ±8 dB (100 Hz)
- TREBLE . . . . . ±8 dB (10 kHz)

Loudness contour (volume control set at −40 dB position) +5dB (100 Hz)/+3 dB (10 kHz)

Filter (SUBSONIC) . . . . . 17 Hz (12 dB/oct.)

Signal-to-Noise ratio (IHF short circuit, A network)
- PHONO (MM, 5 mV input/MC, 0.5 mV input) . . . . . 93 dB/74 dB * *
- CD, TUNER, LINE, TAPE . . . . . 107 dB * *

Signal-to-Noise ratio (DIN, continuous power/50 mW)
- PHONO (MM) . . . . . 74 dB/63 dB *
- CD, TUNER, LINE, TAPE . . . . . 87 dB/65 dB *

Power Supply/Miscellaneous

Power requirements
- U.K. model . . . . . a.c.240V, 50/60 Hz
- Other destination models . . . . AC 110V/120−127V, /220V/240V (switchable), 50/60 Hz

Power consumption 550W

Dimensions . . . . . 420(W) × 348(D) × 126(H) mm 16-1/2(W) × 13-11/16(D) × 4-15/16(H) in

Weight (without package) . . . . . 8.1 kg (17 lb 14 oz)

Accessories

Operating instructions 1

- Specifications and design subject to possible modification without notice, due to improvements.

* Measwred with the DIRECT switch set to ON.

* * Measured by Audio Spectrum Analyzer.

• A-333

Amplifier Section

Continuous power output (both channels driven at 20 Hz to 20 kHz) * *
- T.H.D. 0.02%, 8Ω ..... 40W + 40W *
- T.H.D. 0.03%, 4Ω ..... 50W + 50W *

DIN Continuous power output (both channels driven at 1 kHz)
- T.H.D. 1.0%, 8Ω ..... 55W + 55W
- T.H.D. 1.0%, 4Ω ..... 72W + 72W

Dynamic power output (on EIA dynamic test signal)
- 8Ω ..... 55W + 55W
- 4Ω ..... 90W + 90W
- 2Ω ..... 100W + 100W

Total harmonic distortion * *
- 20 Hz to 20 kHz, 40W, 8Ω ..... 0.02% *
- 20 Hz to 20 kHz, 50W, 4Ω ..... 0.03% *

Input sensitivity/impedance
- PHONO (MM) ..... 2.5 mV/50 kΩ
- CD, TUNER, LINE, TAPE ..... 150 mV/40 kΩ

PHONO overload level
- 1 kHz, T.H.D. 0.02% (MM) ..... 150 mV

Output level/impedance
- TAPE REC, ADAPTOR OUTPUT .... 150 mV/2.2 kΩ

Frequency response
- PHONO (MM), 20 Hz to 20 kHz ..... ±0.3 dB
- CD, TUNER, LINE, TAPE 5Hz to 100 kHz .. $^{+0}_{-3}$ dB *

Tone control (volume control set at −40 dB position)
- BASS ..... ±8 dB (100 Hz)
- TREBLE ..... ±8 dB (10 kHz)

Loudness contour (volume control set at −40 dB position)
+5dB (100 Hz)/+3 dB (10 kHz)

Signal-to-Noise ratio (IHF short circuit, A network)
- PHONO (MM, 5 mV input) ..... 89 dB *
- CD, TUNER, LINE, TAPE ..... 107 dB *

Signal-to-Noise ratio (DIN, continuous power/50 mW)
- PHONO (MM) ..... 73 dB/63 dB *
- CD, TUNER, LINE, TAPE ..... 86 dB/65 dB *

Power Supply/Miscellaneous

Power requirements
- U.K. model ..... a.c.240V, 50/60 Hz

Power consumption
- U.K. models 410W

Dimensions ..... 420(W) × 348(D) × 126(H) mm
16-1/2(W) × 13-11/16(D) × 4-15/16(H) in

Weight (without package) ..... 7.0 kg (17 lb 7 oz)

Accessories

Operating instructions 1

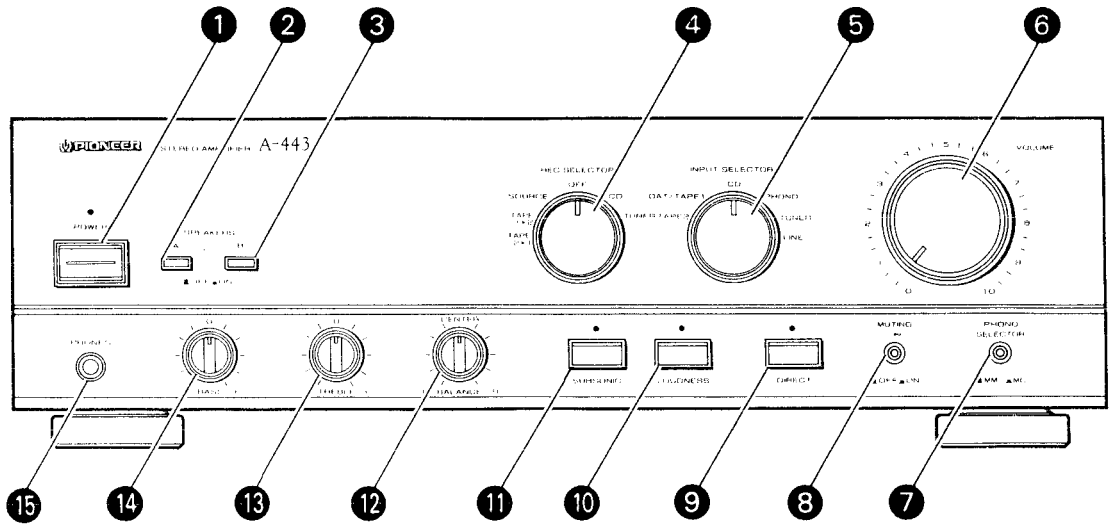
- Specifications and design subject to possible modification without notice due to improvements.

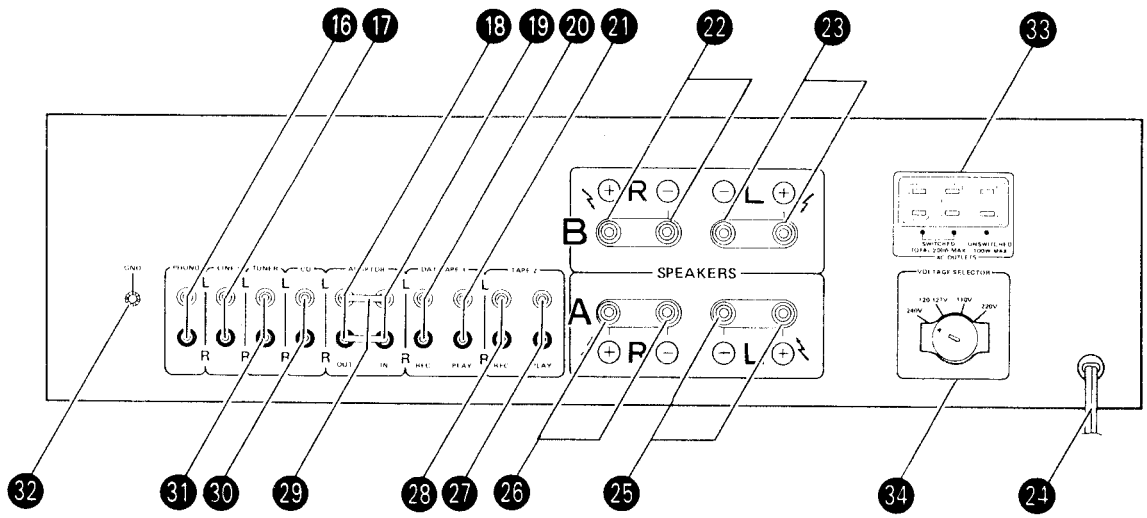
* Miasured with the DIRECT switch set to ON.

* * Measured by Audio Spectrum Analyzer.

9. PANEL FACILITIES

The illustration shows model A-443.
Model A-333 is not equipped ❼, ❽ and ⓫.





The U.K. models (A-443 and A-333) are not equipped with ㉝, ㉞.

[FRONT PANEL]

❶ POWER switch/indicator
Press to turn power to the unit ON and OFF.

❷ SPEAKERS A selector switch
Use this switch to listen to the speaker systems connected to the SPEAKERS A terminals.

ON (▬) :
Depressed position: Sound is heard from the speaker systems.

OFF (■) :
Released position: No sound is heard from the speaker systems. Set to this position when listening with headphones.

❸ SPEAKERS B selector switch
Use this switch to listen to the speaker systems connected to the SPEAKERS B terminals.

ON (▬) :
Depressed position: Sound is heard from the speaker systems.

OFF (■) :
Released position: No sound is heard from the speaker systems. Set to this position when listening with headphones.

❹ REC SELECTOR switch
When this switch is set to a position other than SOURCE or OFF, the equipment selected by the REC SELECTOR switch can be recorded from, irrespective of the settings of the INPUT SELECTOR and DIRECT switches.

TUNER:
To record from the equipment connected to TUNER terminals.

CD:
To record from the equipment connected to CD terminals.

OFF:
In this position, nothing from the REC terminals of DAT/TAPE 1 and TAPE 2 is output. Set to this position when not recording; the tape deck will be disconnected, improving sound quality.

SOURCE:
To record from the equipment selected by the INPUT SELECTOR switch.

TAPE:
1 ▶ 2 — To record (copy) from the tape deck of DAT/TAPE 1 terminals, to the tape deck of TAPE 2 terminals.

2 ▶ 1 — To record (copy) from the tape deck of TAPE 2 terminals, to the tape deck of DAT/TAPE 1 terminals.

❺ INPUT SELECTOR switch
Use to select the playback source.

LINE:
For playback with a component connected to the LINE terminals.

TUNER:
For AM or FM broadcast reception with a tuner.

PHONO:
For record playback with a turntable.

CD:
For compact disc playback with a CD player.

DAT/TAPE 1:
For playback with a tape deck or digital audio tape deck connected to the DAT/TAPE 1 terminals.

TAPE 2:
For playback with a tape deck connected to the TAPE 2 terminals.

❻ VOLUME control
Use to adjust the volume level.

NOTE:
This unit is equipped with a circuit that attenuates the LOUDNESS and TONE effect as volume is turned up.

❼ PHONO SELECTOR switch (Model A-443 only)
Set in accordance with the type of cartridge used with your turntable.

MM (■) :
Set to this position when using a moving magnet cartridge, or a moving coil cartridge with a high output of 1 mV or more.

MC (▬) :
Set to this position when using a moving coil cartridge.

❽ MUTING switch (Model A-443 only)
Use to temporarily cut sound volume.

ON (▬) :
The sound is cut off.

OFF (■) :
The sound will return to its previous volume.

❾ DIRECT switch/indicator
Use this switch/indicator when you do not wish to pass the output from input terminal equipment through the various frequency adjusting circuits (SUBSONIC, BASS, TREBLE, BALANCE, LOUDNESS) and adaptor terminals (ADPT).

ON:
The indicator lights: The signals input through the input terminals are reproduced without passing through the various frequency adjusting circuits. This results in flat, pure sound which is a more faithful reproduction of the input source.

OFF:
The indicator goes out: The signal passes through the various frequency adjusting circuits.

⑩ LOUDNESS switch/indicator
Use when listening at low volume levels.

ON:
The indicator lights: Boosts low and high frequencies to give added punch to playback even at low volume levels.

OFF:
The indicator goes off: Should normally be left in this position.

NOTE:
This switch does not operate when the DIRECT switch is in the ON position.

⑪ SUBSONIC filter switch/indicator (Model A-443 only)
Use this switch when playing records with coarse grooves.

OFF:
Released position; leave in this position for normal playback.

ON:
Depressed position (the indicator lights). In this position, frequencies of 17 Hz and below are cut, eliminating super-low-frequency noise caused by coarse record grooves, and thus helping prevent sound distortion.

NOTE:
This switch does not operate when the DIRECT switch is in the ON position.

⑫ BALANCE control
Should normally be left in the center position. Adjust the balance if the sound is louder from one of the speakers. If the right side is louder, turn toward the L(left) position and if the left side is louder, turn toward the R(right) position.

NOTE:
This control does not operate when the DIRECT switch is in the ON position.

⑬ TREBLE tone control
Use to adjust the high-frequency tone. The center position is the flat (normal) position. When turned to the right, high-frequency tones are emphasized; when turned to the left, high-frequency tones are de-emphasized.

NOTE:
- *This control does not operate when the DIRECT switch is in the ON position.*
- *At volume levels lower than "4", the set tone control effect is obtained.*
  At volume levels higher than "4", the effect becomes increasingly weaker.

⑭ BASS tone control
Use to adjust the low-frequency tone. The center position is the flat (normal) position. When turned to the right, low-frequency tones are emphasized; when turned to the left, low-frequency tones are de-emphasized.

NOTE:
- *This control does not operate when the DIRECT switch is in the ON position.*
- *At volume levels lower than "4", the set tone control effect is obtained.*
  At volume levels higher than "4", the effect becomes increasingly weaker.

⑮ PHONES jack
When using headphones, insert the plug into this jack.

[REAR PANEL]
⑯ PHONO terminals.
⑰ LINE terminals.
⑱ ADAPTOR OUT terminals.
⑲ ADAPTOR IN terminals.
⑳ DAT/TAPE 1 REC terminals.
㉑ DAT/TAPE 1 PLAY terminals.
㉒ SPEAKERS B terminals (right channel).
㉓ SPEAKERS B terminals (left channel).
㉔ Power cord.
Connect this cord to an AC wall socket, or the AC outlet of an audio timer.
㉕ SPEAKERS A terminals (left channel)
㉖ SPEAKERS A terminals (right channel)
㉗ TAPE 2 PLAY terminals.
㉘ TAPE 2 REC terminals.
㉙ Shorting bars.
㉚ CD terminals.
㉛ TUNER terminals.
㉜ Turntable ground terminal (GND).
㉝ AC OUTLETS
㉞ VOLTAGE SELECTOR